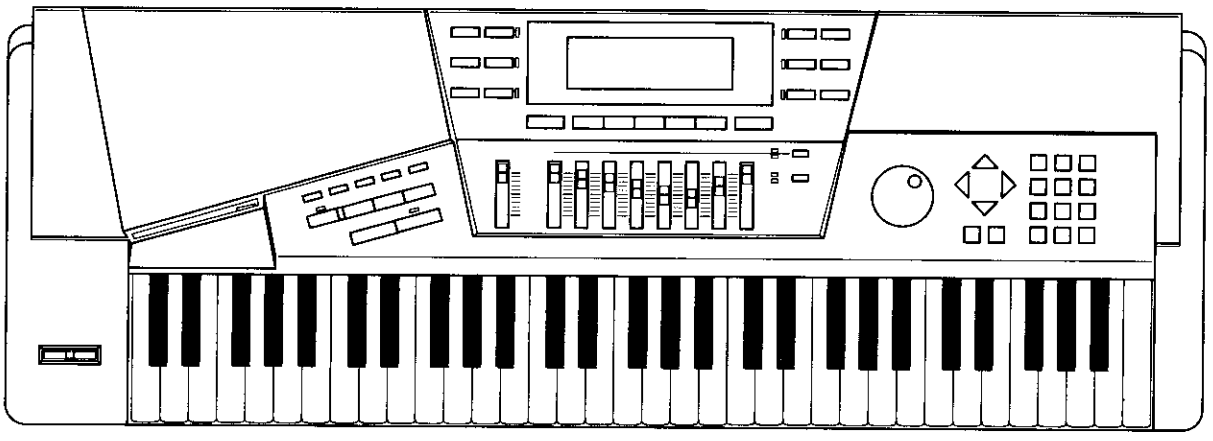
Roland

GENERAL MIDI

MUSIC WORKSTATION

JW-50

OWNER'S MANUAL



Introduction

Thank you for purchasing the Roland JW-50 Music Workstation. The JW-50 is an all-inclusive, easy-to-use keyboard equipped with a wide variety of music-creation functions.To ensure proper and trouble-free operation, please take the time to read this entire manual.
If you are using the JW-50 for the first time, please read the 'Quick Start' guide before reading this manual.

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About This Manual

This manual contains the 6 chapters outlined below.
You can reading any chapter depending what you wish to do on the JW-50.

Chapter 1 **Basic Operations**	This chapter describes the basic operation of the JW-50. It is essential to master the basics before attempting more sophisticated procedures.
Chapter 2 **Inside the JW-50**	This chapter describes the basic organization of the JW-50, how to organize Song Data, how to handle MIDI messages, etc. If you wish to use the JW-50 in combination with other MIDI devices, be sure to read this chapter.
Chapter 3 **Operation Guide**	In this chapter, the JW-50's functions are briefly described. The contents of this chapter are shown in detail on page IV, directing you to the function you require.
Chapter 4 **Screen and Available Functions**	In this chapter, all the display screens are explained. They are arranged according to the JW-50's operational modes. Refer to this chapter when you require information about a particular screen.
Chapter 5 **Glossary**	This chapter explains the JW-50's terminology (the terms are listed in alphabetical order). Refer to this section if you require clarification of a particular term.
Chapter 6 **Appendix**	This chapter contains troubleshooting information, an error message table, a Tone list, a parameter list, MIDI implementation and so on.

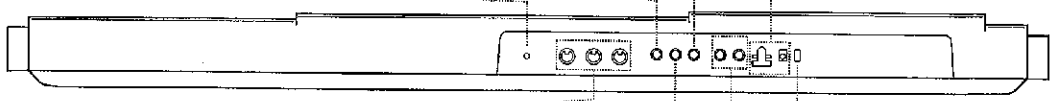
Panel Descriptions

LCD Contrast Knob
This knob adjusts the contrast of the display.

External Control Jack
Connecting an expression pedal to this jack allows you to control a particular function with the pedal. You can select the function to be controlled.(☞p. 4-61)

Pedal Hold Jack
Connect a pedal switch to this jack to control the Hold (sustain) effect.

AC Adaptor Jack/Cord Hook
Connect the supplied AC adaptor to this jack. Loop the cord around the Cord Hook to prevent the adaptor from being accidentally disconnected.



MIDI Connectors (IN/OUT/THRU)
Connect external MIDI devices to these connectors.

Pedal Switch Jack
Connect a pedal switch to this jack allows you to control a particular function with the pedal. You can select the function to be controlled.(☞p. 4-61)

Output Jacks (L (MONO), R)
The JW-60's audio signals are output through these jacks; connect an amplifier or mixer to them. For monaural output, use only the L (MONO) jack.

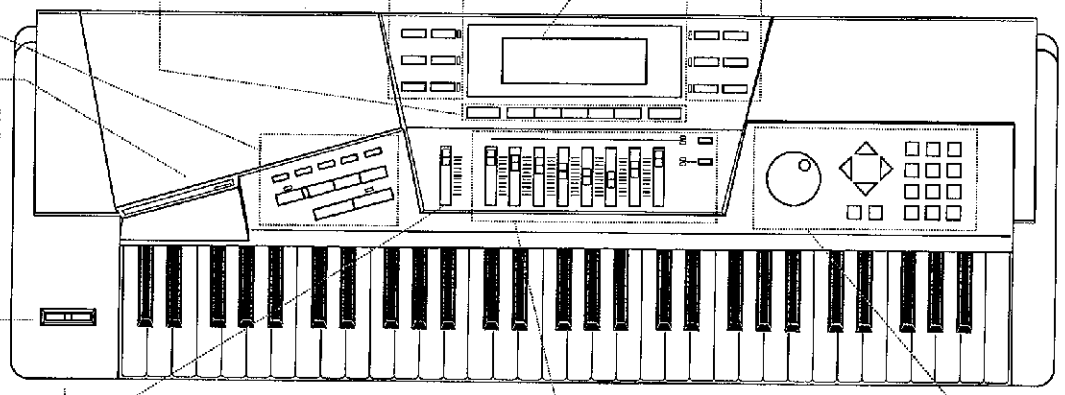
Power Switch

Sequencer Section
These keys are used during recording and playback.

Function Keys/Shift Key/Exit Key
The Function Keys perform the operations indicated at the bottom of each screen. In some screens, the functions can be changed by pressing the key while holding [SHIFT] down.
Press [EXIT] to return to the previous level in the command hierarchy.

Display Window

Mode Section
These keys are used for selecting modes.



Disk Slot
Insert a floppy disk into this slot. To remove a disk, press the button located at the lower right of the slot. Never attempt to remove a disk from the slot while the disk drive is operating (when the indicator at the lower left of the slot is brightly lit). Use only 3.5 inch, 2DD disks.

Pitch Bend/Modulation Lever
This lever is used to smoothly change the pitch of sounds, and also to create a vibrato effect.
(Quick Start ☞p. 13)

Headphone Jack
Jack accepting connection of headphones. Even with headphones connected, sound is still output from the Output Jacks.

Master Volume
This control adjusts the overall volume of the sound output through the Output Jacks and Headphone Jack.

Mixer Section
These sliders adjust the balance of volume/pan settings in the corresponding track. Using these sliders, you can record the volume/pan settings at the specified point or perform Mixer-recording.

Edit Section
This section is used for editing parameter values.

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BASIC OPERATIONS

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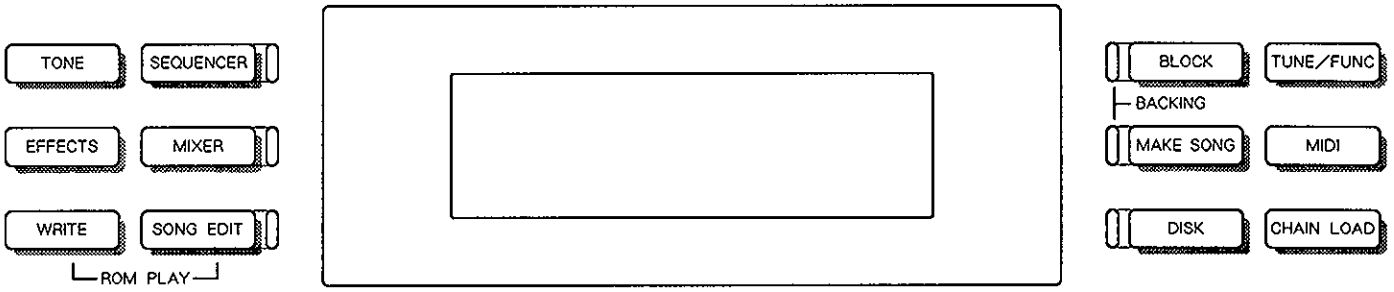
Navigating Among Modes

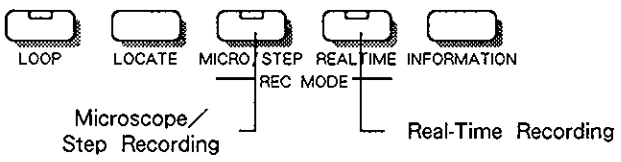
The JW-50 is organized into 12 modes, which together provide access to all the functions the unit is capable of performing. Select the desired mode by pressing the corresponding button.



TONE	This mode allows selection of the Tones for the tracks, and is also the mode you use when creating User Tones.
EFFECTS	This mode is used to alter the settings for the Reverb/Chorus effects.
WRITE	Enter this mode whenever you wish to store a group of settings you have made for a new Tone or Chord Changes. Additionally, this mode is used to store alterations in a track or effects as part of a song.
SEQUENCER ☆	This is the JW-50's fundamental mode, and it allows for the playback/recording of songs. Whenever the power is turned on, this is the mode that will be selected.
MIXER ☆	From within this mode you can use the faders to adjust the volume and pan for each of the tracks. Such Mixer settings can be stored along with songs. Also, during playback you can check the recorded movement of the faders.
SONG EDIT ☆	Enter this mode to carry out editing of song data.
BLOCK (BACKING) ☆	This is the first of the two modes that are employed to create accompaniment using the Backing feature. Enter this mode to create Blocks (4 measures of backing).
MAKE SONG (BACKING) ☆	This is the other mode used to create accompaniment using the Backing feature. Use this mode to arrange the Blocks into the order in which they are to be played.
DISK ☆	This mode covers all operations (except the Chain Load Setting) related to floppy disks. It is used, for example, to save onto disk the data for songs or Tones that have been created, or for loading such data back into the instrument.
TUNE/FUNC	Enter this mode to alter settings that relate to the system as a whole, such as the tuning or the action of pedals.
MIDI	From within this mode you can make settings that affect MIDI communications. Such settings need to be made when connecting the instrument to other MIDI devices.
CHAIN LOAD	Select this mode when you have several songs on a disk you wish to play back in succession.

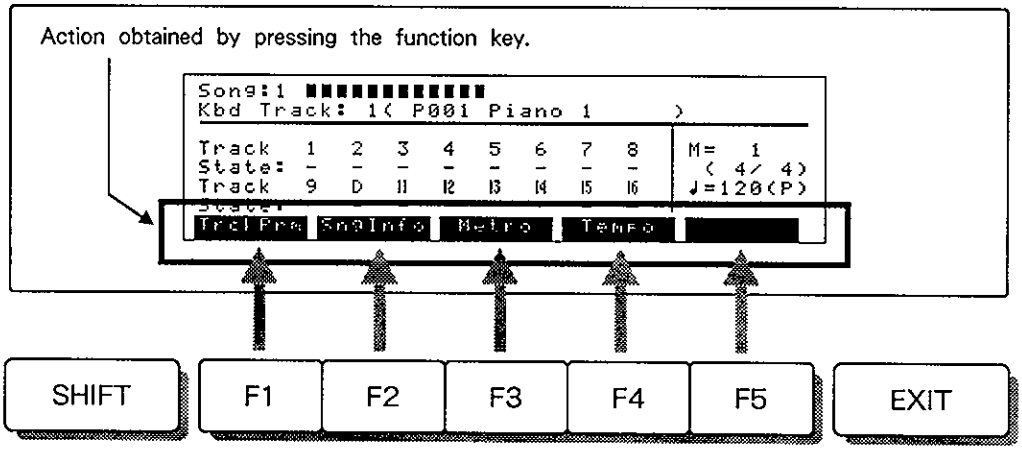
⇨ *Whenever you press the button for any of the modes marked with "☆," its indicator will light.*

Note that you do not need to press [SEQUENCER] to record songs or use the microscope function. Separate keys are provided for this purpose, as shown below.



Using The Function Keys

When pressed, the Function Keys (F1 to F5) activate the corresponding function indicated in the bottom row of the display.



Some of the most common tasks accomplished with the Function Keys are outlined in the following.

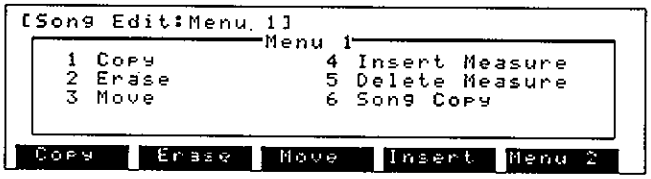
● Switching Screens

A Function Key is often used to select another related screen where settings for a specific function can be made. For example, from the screen shown above, you would press F1 to switch to the Track Parameter screen. Afterwards, press EXIT to return to the original screen.

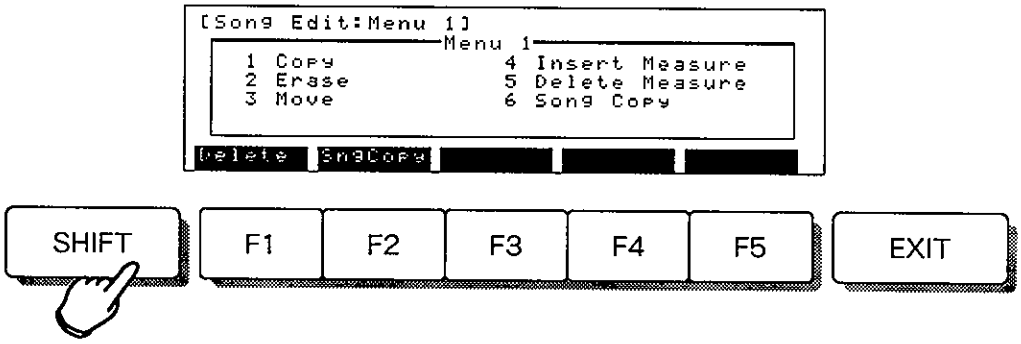
● Menu Screens

Within Menu Screens, simply select one of the choices.

Example: Song Edit Menu Screen



Selections F1 to F5 can be specified directly, simply by pressing the corresponding Function Key. A choice such as [6 Song Copy], however, is selected by holding down SHIFT while you press F2 . There are a number of screens like this in which choices will change if you hold down SHIFT .

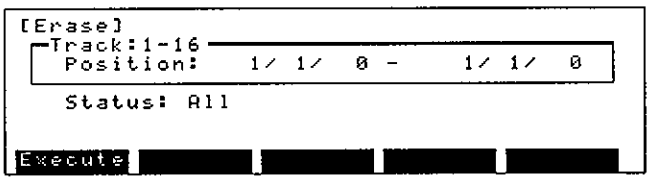


⇨ *The SHIFT key to the left of the Function Keys, and the SHIFT key to the lower left of the numeric keys, function identically.*

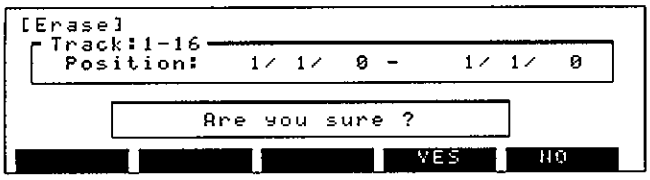
● Executing a Procedure

In the Song Edit and Disk modes, a Function Key is pressed to select a procedure.

Example: Erase Screen (Song Edit mode)



① To confirm that you wish the procedure to begin, press [F1] Execute.
The "Are you sure ?" message will appear, asking you to confirm your choice.

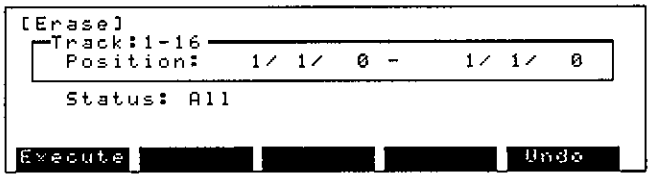


② When certain you wish to proceed, press [F4]. If you change your mind, press [F5] NO to cancel the procedure.

⇨ *YES or NO selections can also be made using the [DEC] (YES), and [INC] (NO) below the CURSOR keys.*
⇨ *Alternately, [EXIT] can be pressed to cancel a procedure.*

< UNDO Function >

While in the Song Edit mode, you have the option of reverting to the state you were in before a procedure was executed, even after it has been completed. This feature is called the "UNDO Function." After a procedure has been executed, the [F5] key can be pressed to "Undo" the action. The unit will revert to the previous state.

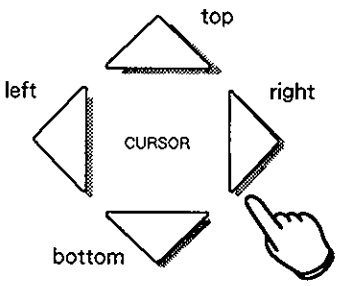


* *Note, however, that you will not be able to undo a procedure if you have switched to some unrelated screen in the meantime.*

Making Changes

To make changes in a parameter value, move the cursor (where the character is reversed) to the value. Then, using the Dial or the Value keys (DEC INC), change the value.

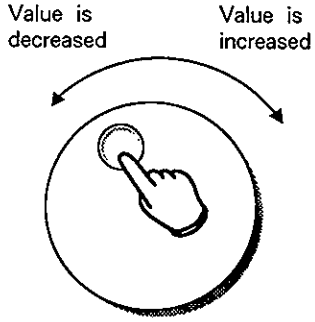
Moving the Cursor

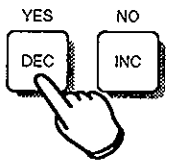


Press the Cursor Key that corresponds to the direction in which you wish the cursor to move.

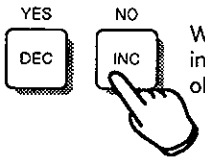
Changing Values

Use the Dial, DEC INC , or the numeric keys to make changes in a value. Except for special cases, it does not matter which method you choose to use.



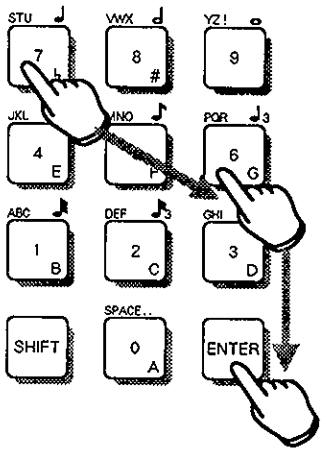


With each press of DEC, the value decreases by one. Hold the key down to obtain a rapid change in value.



With each press of INC, the value increases by one. Hold the key down to obtain a rapid change in value.

⇨ *To obtain an even faster increase in a value, hold down INC while you then press DEC . Conversely, to rapidly obtain much lower values, hold down DEC , and press INC .*



Enter the numbers making up the desired value, and press ENTER to confirm the choice.

For example, to enter a value of 76, press 7 → 6 → ENTER .

To enter a negative value, hold down SHIFT while you press 7 (for example).

* *When a value has not yet been confirmed for entry, it will be enclosed by a rectangle. If you should move the cursor to another position while in this state, the value will revert to what it was originally.*

* *When using the numeric keys to specify the Locate Point number, the value is automatically entered.*

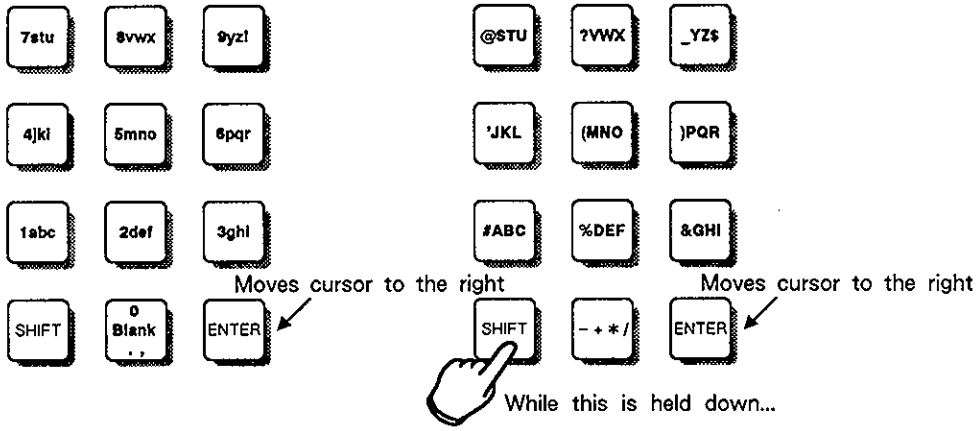
Special Uses of Numeric Keys

With certain kinds of settings you will make, the numeric keys perform special functions which allow for more rapid entry.

Entering Names

The characters that appear to the upper left of each numeric key can be entered directly. With each press of a key, you step through the selection of characters that particular key offers. With [SHIFT] held down the available choices will be different.

You need not press [ENTER] when entering names, since your selections will be accepted automatically. If you press [ENTER], the cursor moves to the right, where the unit waits for the next character to be entered.

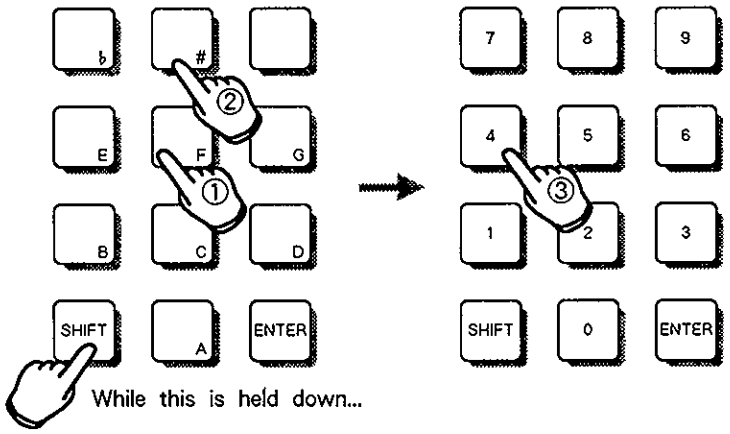


Entering Note Names (Step Recording/Microscope)

Beyond simply specifying the position of a key on the keyboard (in terms of its Note Number), the numeric keys can also be used to specify note names.

Example: Specifying F # 4

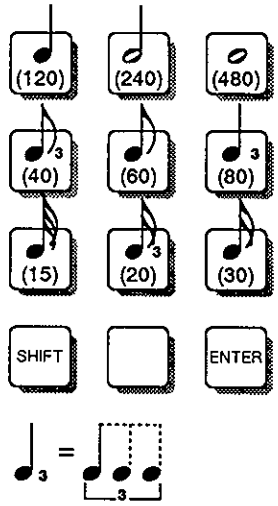
While holding down [SHIFT], press [F], [#], then [4].



** Note Numbers refer to a specific position (note) on a MIDI keyboard. Middle C (C4) is note number 60. The full range of these numbers spans from 0 (C-1) to 127 (G9).*

** Whether the display will indicate notes with a # or ♭ is a selection which can be changed using the "Note Name" setting (☞ p. 4-61). If set to "#" the display will indicate the notes with "#" even if you enter a "♭," and vice versa.*

Step Time Settings (Step Recording)



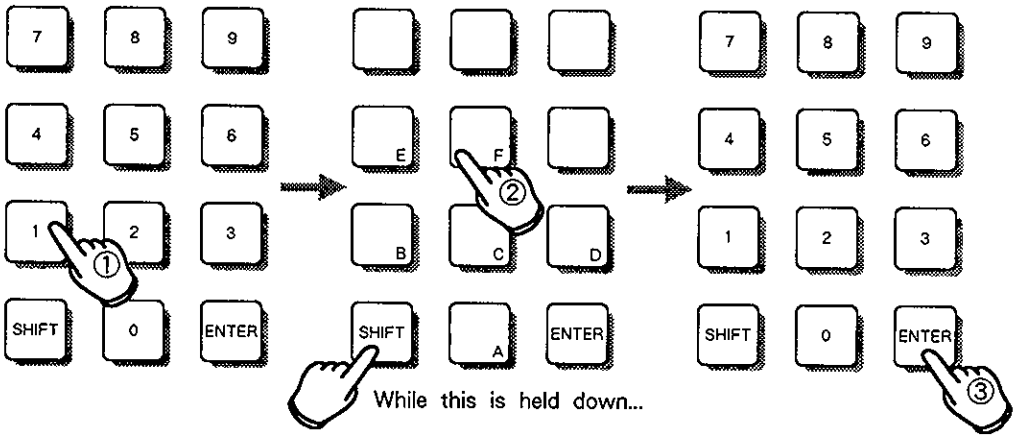
The note symbol that appears to the upper right of each numeric key can be used to specify the Step Time value for use with step recording.
A rest of equal duration can be selected by holding down [SHIFT] while pressing a particular key. (Note, however, that no actual 'rest' data is entered. The song position simply advances to the next step.)

Hexadecimal Input (Microscope)

When using the Microscope feature to enter Exclusive Events, the values must be entered in hexadecimal form. In hexadecimal, the numbers from 10 to 15 are represented by the letters A to F. When using the numeric keys for this purpose, refer to the letters that appear to the lower right of keys [0] to [5]. Hold down [SHIFT] while pressing the relevant key to obtain the letters A to F.

Example: Specifying 1FH

First press [1]. Then, while holding down [SHIFT], press [F], then [ENTER].



** Whenever hexadecimal numbers are referred to in this manual, an "H" is added to the number in order to differentiate it from ordinary decimal numbers. When entering actual values, however, the "H" is unnecessary.*

CHAPTER

2

INSIDE THE JW-50

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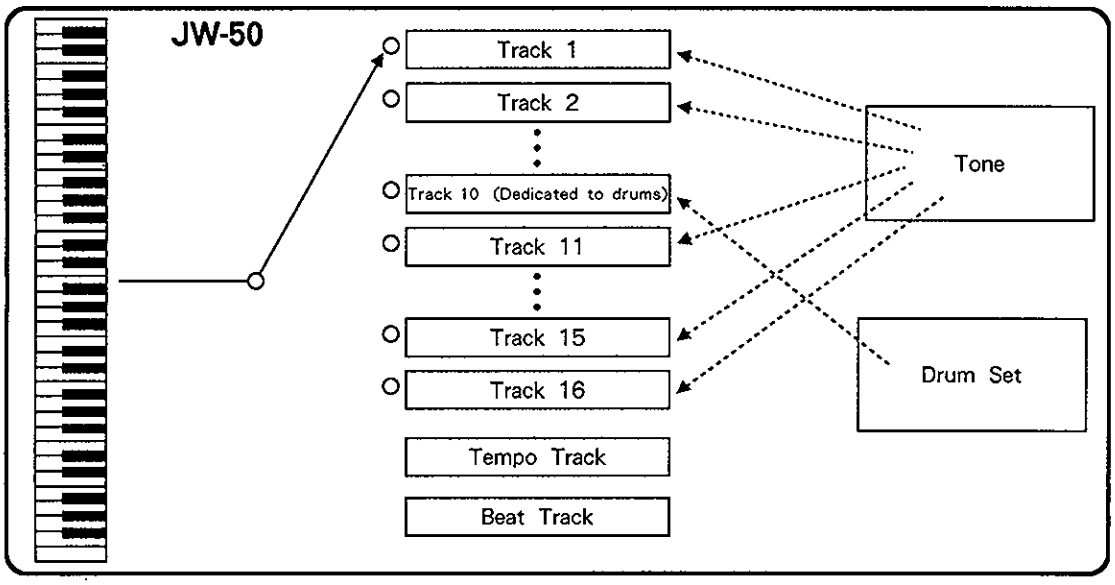
Basic Organization Of The JW-50

The following describes the internal organization of the JW-50.

Tracks

The JW-50 provides 16 Tracks, along with an additional Tempo Track and a Beat Track.



Tracks 1 to 16

When playing the keyboard or recording into the sequencer, you must first select one of the tracks.

You can record anything that you play on the keyboard onto any of the tracks. Any sound (Tone) that the unit contains can be selected for any track. When composing a song, you will normally record each Tone on its own track. Track 10 is reserved for percussive sounds. The Drum Sets provide a different percussion sound for each key of the keyboard.

⇨ *Should you require another Drum Track, Track 16 can be made into a secondary Drum Track. This is useful if you wish to have access to the sounds in two Drum Sets at the same time.*

Tempo Track

The Tempo Track stores changes in the tempo. Such recording takes place whenever you change the tempo during the course of a song.

* *The information recorded into the Tempo Track consists of data showing the relative change that took place with respect to the previous tempo. The tempo change is actually a percentage increase or decrease of the original. For this reason, the tempo for everything in the song will change if you change the current tempo for the song after it has been recorded.*

Beat Track

The Beat Track controls the beat (time signature) of all the measures. It will automatically carry out recording in accord with whatever beat is set.

Tones

Tones are the instrument sounds that are used for all tracks (except the Drum Track). There are three Tone Groups, as shown below. Only the Preset Tones and User Tones can be selected while playing the instrument.

Preset Tones (P1 to P128)	The fundamental Tones on the JW-50.
User Tones (U1 to U128)	Tones which have been edited to create new sounds are called User Tones.
GS Tones (−1 to −128)	These Tones are designed to provide compliance with the GS Format. They can be used for creating User Tones, or for the accompaniment produced with the Backing feature.

Drum Sets

Drum Sets provide the percussion sounds that are used in the Drum Track (track 10).

When playing Drum Sets, you obtain a different percussive sound from each key on the keyboard. Beyond the comprehensive collection of Drum Sets, containing almost every type of percussion instrument you might need, an SFX set (with sounds such as a helicopter, dog barks, and surf sounds) is also included. A total of 10 sets are provided.

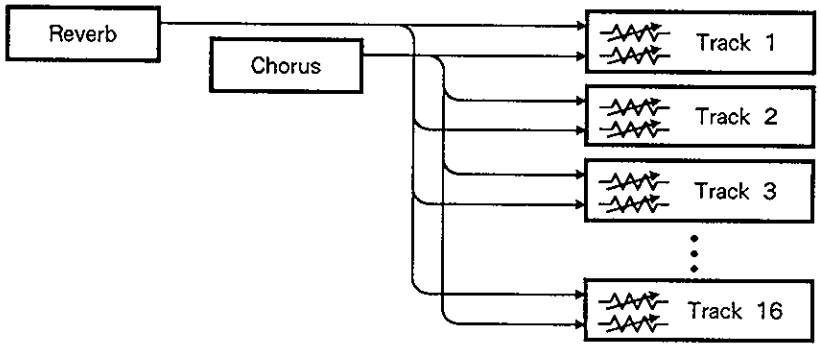
** For Track 10 you can select any one of the 8 ordinary Drum Sets. When you wish to use one of the other 2 sets (SFX or CM-64/32), you must change track 16 to a Drum Track, then select the desired set.*

Reverb and Chorus

The JW-50 is equipped with onboard digital Reverb and Chorus effects to enhance the instrument's sounds.

Reverb	Reverberation is a complex echo effect which is used to create the illusion of spaciousness. This includes delay and panned delay effects.
Chorus	An effect which adds warmth and depth to sounds. Includes flanging or short-delay effects.

The effect that you select will affect all the tracks. However, since the degree to which the effect will be applied can be set separately for each track, you can set the amount of effect for individual Tones.



Tones and Voices

The most basic sound element created with this instrument is known as a "voice." For each voice, there is a dedicated oscillator (or waveform generator) which is required to produce it.
In practical terms, then, if you are using a Tone which is composed of only one voice, only one of these oscillators is needed to produce the single note sounded when you press a key on the keyboard. If the Tone is composed of two voices, however, two of the oscillators will be put to work for each note sounded. For this reason, you should take into consideration the number of voices that each particular Tone is composed of when making your combined selection, since certain Tones require more voices to produce than others.
The JW-50 is equipped with a total of 24 voices that are capable of individual, simultaneous operation. You should try to keep this number in mind, and avoid using an overall combination of Tones which, when the number of voices used by each of them is added together, would exceed the 24-voice limit. Should you inadvertently end up using more than 24 voices at once, you will most likely notice that some of your notes will be left out. Note also that certain notes could be dropped even when the combined number of voices being used does not actually exceed 24, if the Tones you are using tend to be sustained longer than average, and for that reason are putting an additional burden on the instrument's voice generating capabilities.

⇨ *For information on the number of voices used by particular Tones, refer to the "Preset Tone Chart" (☞ p. 6-7).*

* *The number of voices used in a newly created User Tone is identical to the number of voices that the GS Tone used.*

Track Priority Ordering

Track Priority Ordering applies when the total number of voices being used exceeds 24. Certain tracks must cease producing their sound in favor of other tracks, and this system of ordering determines which tracks are given priority over others. The Track Priority Order is as shown below, with track 10 having the highest priority. The track having the lowest priority (16) will be the one that will stop producing sounds first, when necessary. For this reason, you should assign all essential instrument sounds to tracks with high priority.

Track Priority	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Number	10 (Drum Track)	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16

Voice Reserve

Voice Reserve is a setting which determines the minimum number of voices that will always be reserved and made available for a certain track. This is useful in situations in which the total number of voices used has exceeded 24. For example, if Voice Reserve is set to '10' for Track 12, that track will always have 10 voices available to it (in most any situation).
Note, however, that the values set for Voice Reserve for all tracks must add up to 24 or less.
Note also that this setting does not alter the Track Priority Order.

Track Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voice Reserve Setting (No. of voices)	2	2	2	2	2	2	2	0	0	2	2	2	2	2	0	0

Concerning Song Data

The following explains how Song Data on the JW-50 is organized, and explains how Standard MIDI Files are handled.

Data Stored Within Songs

The JW-50 allows you to store on disk all of the types of data shown below, together as part of a song. For further details, refer to the "Parameter Chart" (☞ p. 6-18).

● Data stored within tracks

Performance data for tracks 1 to 16 (including volume/pan recorded in mixer mode)
Tempo data from the Tempo Track
Beat data from the Beat Track

● Other song data

Settings for the Track Parameters (excluding Bend Range settings)
Effects settings
Song name
Settings for Locate Points
Names of User Tone Sets

** Note that any setting changes for the Track Parameters (except for a few) and effects are only temporary. These settings will revert to their former valuse if you switch to a different song, etc. If you wish to keep your changes as part of the song, you should perform a "Write" operation before leaving each screen where you have made changes.*

** The name of the User Tone Set that is stored within the song is the same as the name residing in the instrument at the time the song was saved onto disk. For this reason, only songs that have been saved onto disk at least once will have this User Tone Set name recorded in them.*

Concerning Standard MIDI Files

The JW-50 is capable of handling song data in Standard MIDI File format.

Standard MIDI Files consist of song data that has been saved in a standardized format. This format was designed to bridge the incompatibilities that exist between different manufacturers, and allow song data to be more interchangeable.

Before playing Standard MIDI Files on the JW-50, they must be converted to JW-50 song data during loading. The reverse is also possible; you can convert JW-50 song data to Standard MIDI Files as they are saved onto disk.

< Standard MIDI Files which can be loaded into the JW-50 >

When loading Standard MIDI Files into the JW-50, the following guidelines must be observed.

⇨ *Any disk from the Roland "SMF Music Data" series can be loaded as is into the JW-50.*

● Standard MIDI Files Formats

Format 0	Consists of a single track, and within it the data for several MIDI channels.
Format 1	Allows for several tracks, within which the data for several MIDI channels can be stored. (No limit to the number of tracks.)

* *The JW-50 does not allow you to record the performance data for more than one MIDI channel into a single track. Each track is only capable of recording data from the MIDI channel of the same number. Should you load a Format 1 Standard MIDI File, the data in it will be reorganized in accord with the separate MIDI channels.*

● File name must carry the extension ".MID"

To use Standard MIDI Files that do not have the ".MID" extension, first add the extension to the file using your sequencer.

⇨ *The JW-50 (and all other sequencers manufactured by Roland) automatically add the ".MID" extension when the file is saved as a Standard MIDI File.*

● MS-DOS Standard MIDI Files

Standard MIDI Files that are not in the MS-DOS format must first be converted to MS-DOS using your sequencer.

● Disks should be formatted on the JW-50

Disks that have been formatted on some other sequencer often may not be usable on the JW-50.

※ *MS-DOS is a registered trademark of Microsoft Corporation.*

< Saving JW-50 Song Data as Standard MIDI Files >

Song data should be saved as Format 0 (Standard MIDI File).
Data which has not been stored into a track will not be saved.

< Producing Standard MIDI Files Compatible with GS Format >

Although the JW-50 is equipped with GS Format sound sources, songs created on the JW-50 will not be fully compatible with the GS Format. For this reason, a GS Format sound generating unit will not be able to faithfully play a JW-50 song even after it has been saved as a Standard MIDI File.
In order to create a Standard MIDI File that is compatible with the GS Format, you need to not only perform a conversion on the Tone data, but also need to input the appropriate data at the song's beginning in order to ensure that it is performed faithfully. For further details, refer to "Converting to Standard MIDI Files Compatible with GS Format" (☞ p. 6-23).

About The Backing Feature

The Backing feature allows you to create backing (accompaniment) for your music with ease.

Backing Creation

After listening to a variety of songs, we can easily recognize that they are constructed of a number of musical patterns which, when put together, form the song. Such constructions can be expressed by showing the way the patterns flow, such as "A – A – B – A." On the JW-50, the pattern units that form the backing (each consisting of 4 measures), are called **"Blocks."** A total of 10 different Blocks (named A to J) are available.

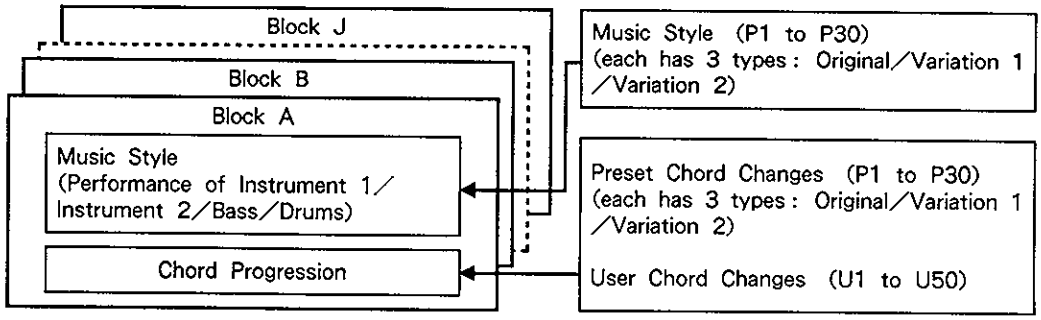
< Procedure >

① Create the Blocks required to form the song's backing.
② Arrange the Blocks in the appropriate order.
③ Record the Blocks into the sequencer as they are played. You can also include the melody you play on the keyboard.

** Whatever performance data you have recorded into the sequencer can be edited in the same way as ordinary recordings of performance data. However, since GS Tones are employed for the backing provided by Blocks, the Tone Parameters are handled in a manner that is different than that with Preset or User Tones. For that reason you need to be careful, since if you use a User Tone along with a track in which backing has been recorded (such as during editing), the manner in which the other Tones sound could change.*

Creating Blocks

Blocks are composed as shown below.



Music Styles provide a selection of essential musical elements, such as rhythm, timbre, and accompaniment, for a wide range of musical styles. The Music Styles rely on these four instrument parts: Instrument 1/Instrument 2/Bass/Drums. They provide the source material used when preparing Blocks for accompaniment. There are 30 Music Styles provided, and each is capable of three playing patterns: Original, Variation 1, and Variation 2.

Blocks are created by first selecting the Music Style that most closely resembles the mood of the composition you have in mind. Then, you need to decide on the chord progressions you wish to have. Chord progressions, each consisting of 4 measures, are generated by the JW-50 as **"Chord Changes."** These Chord Changes can be used as they are, or you can edit the chords before putting together the desired chord progressions.

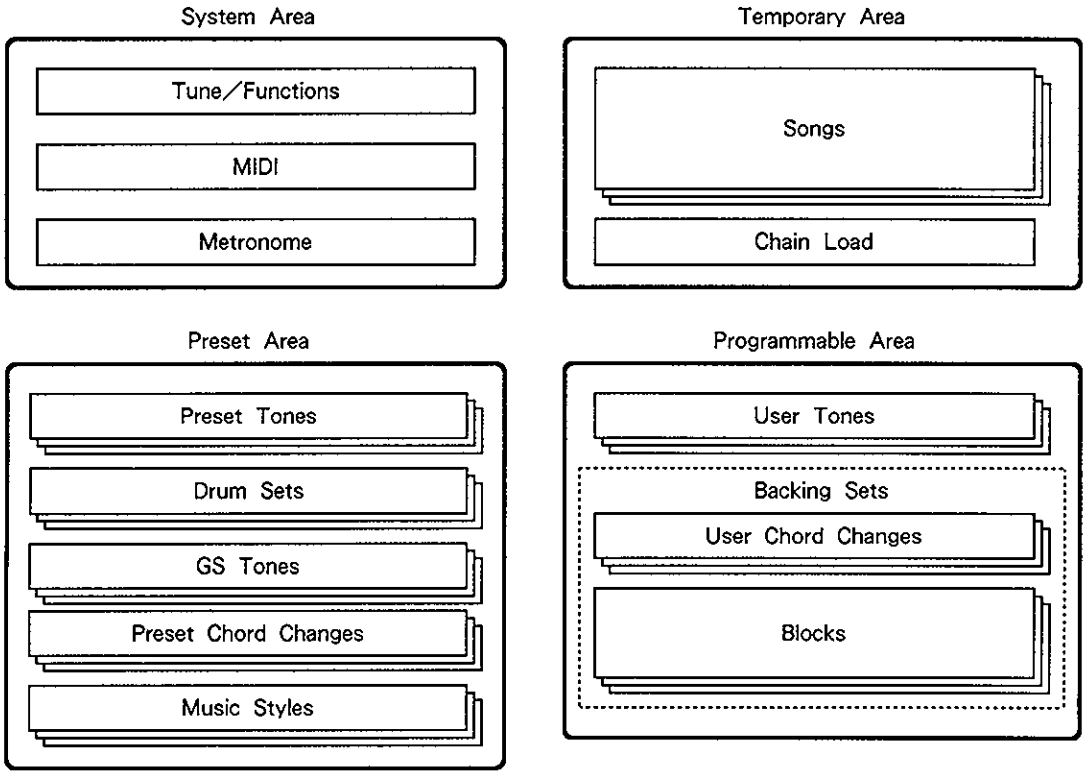
Two types of Chord Changes are provided: Preset Chord Changes (P1 to P30), and User Chord Changes (U1 to U50). Each of the Preset Chord Changes has 3 types: Original/Variation 1/Variation 2. The Preset Chord Changes are set up so they best match a particular style of music that is provided by a Music Style sharing the same location number. Additionally, the User Chord Changes allow you to store whatever chord progressions you create on your own.

Concerning Memory

The following explains how the JW-50 organizes the various types of data it handles.

Internal Memory

There are four Memory Areas (places where data can be stored) in the JW-50:



System Area	The System Area contains all the parameters that determine most of the functions that the JW-50 is capable of performing. Any setting changes that are made are always immediately stored in memory. Data contained in the System Area cannot be saved onto disk.
Temporary Area	All data contained in the Temporary Area is volatile ; it will disappear as soon as the power is turned off. If you wish to keep data located in the Temporary Area, you must save it onto disk.
Preset Area	The Preset Area is where all the fundamental Tones, Drum Sets, and other essential data provided by the JW-50 are located. No changes can be made to the data in the Preset Area, nor can it be saved onto disk.
Programmable Area	The data in the Programmable Area can be edited freely. Settings stored in this area will be retained even while power is off. However, any setting changes made to User Tones and User Chord Changes must be "written" into the unit's memory. They will be lost otherwise. Data contained in the Programmable Area can be saved onto disk.

< Concerning Available Memory >

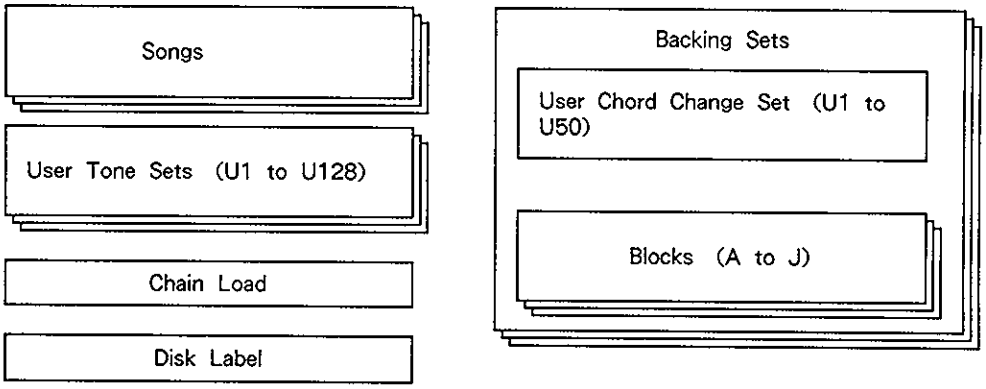
Whenever you wish to check how large a song is, or find out how much memory remains available, simply view the Information screen. Also, while in the Disk mode you can check on how much more data you will be able to store, since the amount of free space (both in internal memory and on disk) is displayed.

The amount of available memory depends on how much memory space is still available in the Temporary Area. If you have a song that is particularly large, you may not be able to store any other songs. Note also that, although a disk is capable of storing more than internal memory can, there are still limits to the amount of data you can store.

Try to check for the amount of available memory you have when creating songs, and when transferring data between the instrument and floppy disk.

Disk Storage

Floppy disks can be used to store a variety of types of data.



● The amount of data which can be stored on any one disk is as follows:

JW-50 Songs	: 50 max.
Standard MIDI Files	: 99 max.
User Tone Sets	: 99 sets max.
Backing Sets	: 99 sets max.
Chain Load	: 1 set

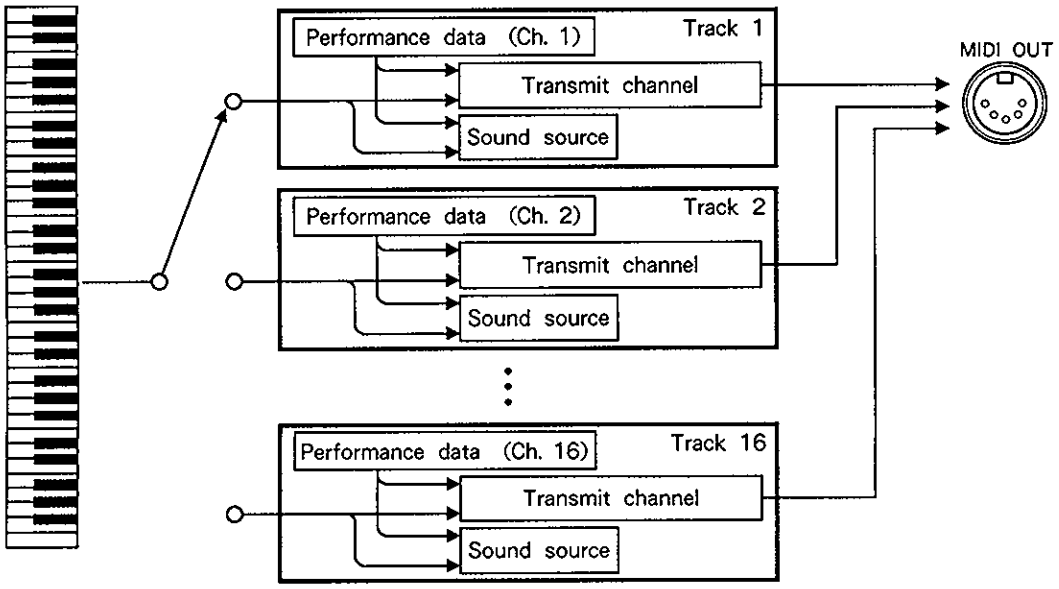
● You must first create a name for any data in the unit's memory before it can be saved onto disk. Also, you cannot save two copies of something if both copies have the same name.

■ Handling Of MIDI Messages

The following explains how the JW-50 handles MIDI messages. This information is only necessary for those who will use the JW-50 with external MIDI devices.

Transmission of MIDI Messages

Each of the 16 tracks on the JW-50 is linked to its own independent sound generating unit. Each of these tracks also has its own MIDI transmit channel. At the factory, each numbered track is assigned the MIDI channel of the same number. Although these assignments can be altered if desired, there should in most cases be no need to do so, since the 16 tracks and 16 MIDI channels are already conveniently and logically matched.



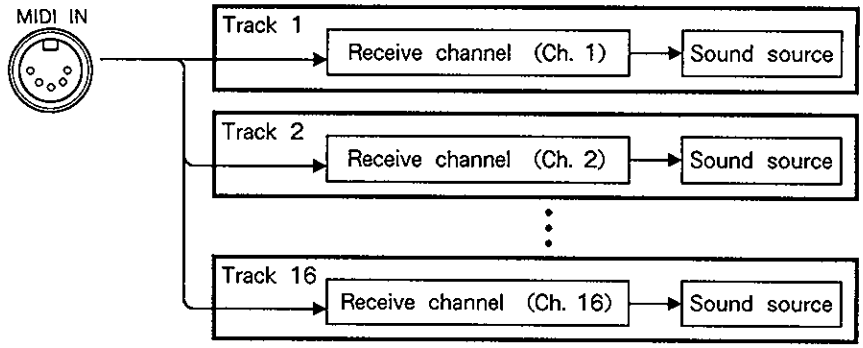
When the keyboard is played, the performance data that is generated will be transmitted on the MIDI channel assigned to the currently selected track. For example, if Track 1 is selected, the MIDI data will be transmitted on Channel 1. You can see that it is easy to switch to another MIDI channel simply by changing tracks.

When a song is played back, the performance data on each of the tracks will be sent out on their respective MIDI channels. Note that the performance data for each of the tracks includes information that sets the MIDI channel on which to transmit. For this reason, the MIDI channel that a particular track's performance data will use cannot be changed even if you change the transmit channel assigned to the track.

Reception of MIDI Messages

Each of the 16 Tracks has its own MIDI receive channel. Each track number is assigned the MIDI channel of the same number. When receiving MIDI data, the data of the different MIDI channels is routed to its respective track. So, data on Channel 1 is received by Track 1, that on Channel 2 goes to Track 2, and so forth.
As a result, each of the 16 tracks can be used much like they were an independent sound generating unit.

** The receive channel set for each track cannot be changed.*



To record MIDI data arriving from an external unit into the JW-50's sequencer, select the track on which to record. Then set the transmit channel that will be used by the external unit to the channel number for that track. Once setup this way, recording can be carried out in the same manner that you would use when recording using the JW-50 alone.

⇨ *You can use Multi-Recording to have the JW-50 record as a whole all the performance information in a song that was created on an external sequencer. Once setup to record this way, you can then simply playback the song on the external sequencer.*

⇨ *If you wish to use the instrument for generating sounds in compliance with the GS Format, be sure to refer to the section beginning on the next page, "About The GS Format."*

Changing Tones

On the JW-50, changes in the Tones are accomplished by combining Bank Select and Program Change messages.

Bank Select messages provide for the selection between either a Preset or a User Tone. A Bank Select message consists of a combination of these Control Change messages: Control No. 0 (MSB) and Control No. 32 (LSB). The value for Control No. 0 is referred to as the GS Bank Number on the JW-50. A GS Bank Number of 80 designates a Preset Tone, whereas for a User Tone, the GS Bank Number is 81. The value for Control No. 32 will always be 0. Program Change messages provide for selection of the Tone Numbers.

● Tones changes made from JW-50 panel
When a Tone is selected, the corresponding Bank Select message and Program Change message will be transmitted.

● Tones changes made at the request of an external MIDI device
To change the Tone, the Bank Select and Program Change messages corresponding to the Tone you wish to change to are sent. The proper way of doing this is to first send the Bank Select message, then send the Program Change. If the Program Change message is sent first, the Tone change may not occur correctly.

Changing Drum Sets

Drum Sets are changed by means of Program Change messages.

When a change in the Drum Set is made, the Program Number which corresponds to the Drum Set you are selecting will be transmitted. To change the Drum Set at the request of an external MIDI device, have the device transmit the Program Number (Drum Set Number) for the Drum Set you wish to select (on the MIDI channel assigned to the Drum Track).

* *If the GS Bank Number for the Drum Track is not 0, no change in the Drum Set will occur even if the Program Change message is received.*

About The GS Format

The "GS" logo appers on the panel of the JW-50. The GS Format is a format for sound generating devices that has been developed by Roland. While completely satisfying all the specifications set down for the General MIDI System, this format also provides for the selection of a much larger number of sounds, and defines many of the finer details for other expressive features that can be applied during performance. Thanks to this format, any product that is equipped with GS sound sources will faithfully reproduce music data that was created under the GS Format, regardless of the particular model used.
Any product which conforms to the GS Format will carry both the "GS" and "GM" logos, which means that it allows for the use of both GS music data and General MIDI Scores.
You will only need to read what follows if you intend to use the JW-50 as a GS Format-compatible sound generator.

As a result of enhancing the workstation features of the JW-50, and making it more convenient to use, the manner in which it handles the parameters it provides diverges somewhat from the methods defined in the GS Format. Because of this, the JW-50 cannot be used as a master device having complete control over an external GS Format sound module. However, song data designed for the GS Format can be played on the JW-50, and it can be placed under the control of an external MIDI device. This is because it is capable of performing as a GS Format sound module.

Circumstances Leading to the Creation of the GS Format

The MIDI standard was created out of the need for a means to communicate performance information among electronic musical instruments, regardless of model or manufacturer. Since then, we have witnessed an amazing increase in the amount of music played automatically by sequencers, and the growing involvement of computers in music. MIDI has without a doubt made an enormous contribution to this rapid evolution.
However, while MIDI has made a lot more possible, certain inconveniences (which exist mainly because MIDI has progressed this far without many of its finer details being worked out) have become apparent.
For example, MIDI defines things in terms such as "Program Change messages are used primarily to transmit the Tone number when switching to different Tones." However, details such as which specific numbers will cause a change to a certain type of sound were never decided upon. As a result, the differences in the relationship between the numbers and the actual sounds obtained can sometimes become quite confusing when working with a variety of different devices. For this reason, song data that was created using one device will often not play as expected when played by some other sound generator.

In striving for a solution, Roland created the GS Format. The GS Format is a Roland standard which provides for a higher level of compatibility, not only with respect to the way Tones are changed, but also for how a great variety of other controlling features will be implemented.

Features of the GS Format

● 16-Part Multi-Timbral Sound Source

The sound sources in this instrument are divided into 16 Parts, which support all 16 MIDI channels. Since a different Tone can be assigned to each Part, this one instrument can easily produce an ensemble performance.

** Since each of the tracks on the JW-50's sequencer has its own individual sound source, the Parts defined by the GS Format can be viewed as equivalent to the JW-50's tracks.*

● A Wealth of Internal Tones Compatible with External Selection Requests

The unit provides a full range of Tones which are suitable for a great many types of music, whether it be classical, jazz, or rock. Of the Tones provided, the Capital Tones (as well as others in the general area) have been created so as to maintain the greatest degree of compatibility with any sound source carrying the GS logo.
Also, in addition to being able to select Tones using conventional Program Change messages, Tone selection can be accomplished in combination with Bank Select messages, thus allowing Tones to be selected via MIDI.

● Special Drum Part

Part 10 is dedicated to percussion. With the Drum Part, you obtain a different sound for each Note Number (each key on the keyboard). The instrument provides numerous onboard Drum Sets, so you can select the one that is most suitable. Drum Sets can be selected using Program Change messages.

⇨ *Track 16 (Part 16) can also be used as a second Drum Track.*

● Comprehensive Controls Available Using MIDI

Control Change messages can be used to control not only the Tone Parameters, but also a variety of extra features which can enhance the expressiveness of a performance. Exclusive messages were normally used to accomplish some of these operations. The GS Format defines the way Control Change messages can be used to control such functions.

● Equipped with Onboard Reverb and Chorus Effects

The extent to which the effects will be applied can be adjusted with respect to individual Parts. This allows you to obtain effects which best suit the particular Tone. The way the effects will be applied can be adjusted using Control Change messages.

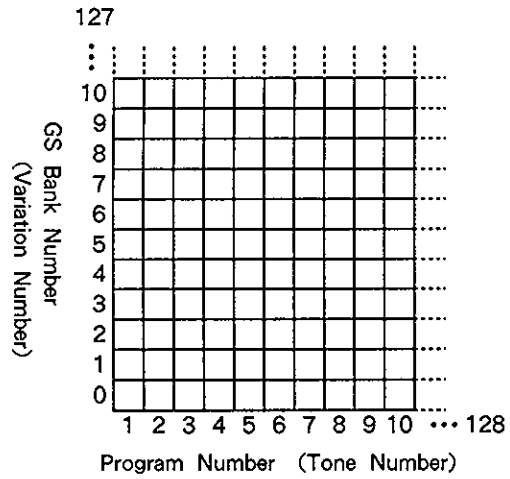
● Designed So Important Sounds Aren't Left Out

In the GS Format, you are guaranteed a minimum number of voices that will be needed to play an ensemble. There are, of course, upper limits on the total amount of voices which can be produced. When this limit is exceeded, certain sounds will not be produced. However, since the Parts follow an order of priority, high priority Parts will always be heard. In addition, by means of the Voice Reserve function, the required number of voices can be set aside for the Parts as required.

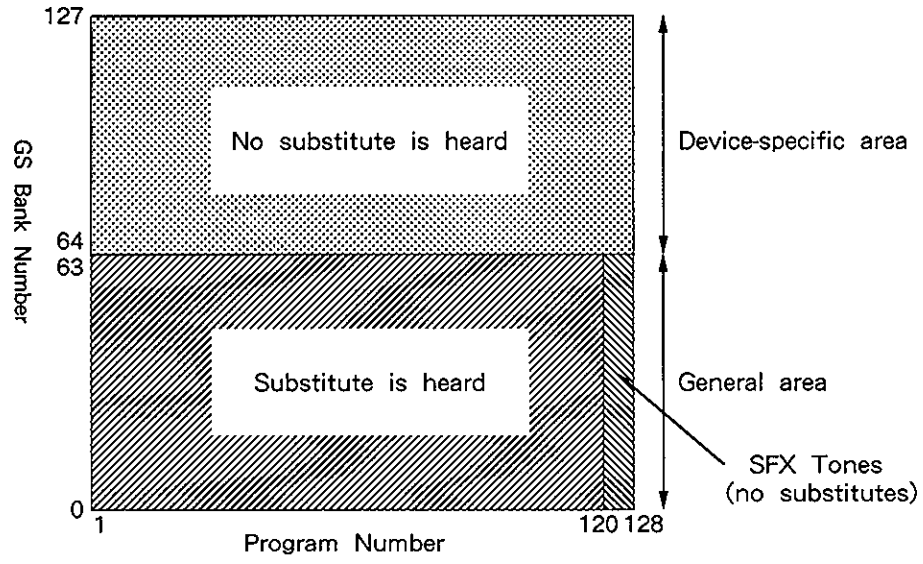
Changing Tones

Tone changes made using MIDI are accomplished by means of Bank Select and Program Change messages.

The GS Bank Number for the Bank Select message corresponds to the Variation Number that was used when specifying the Source Tone when the Tone was created. The Program Number for the Program Change message corresponds to the Tone Number.
The illustration below shows the relationship between the GS Bank Number and the Program Number. The relationship between the groups of numbers signifying sounds is known as a "Tone Map."



Since there are 16,384 (128 × 128) possible combinations of a GS Bank Number and a Program Number, you could theoretically have access to that many Tones. But there are, of course, not actually that many, since not every possible location contains a Tone. Depending on the device, the number of available Tones will vary. For this reason, it is possible to encounter situations in which GS sound module "A," for example, contains Tones that GS sound module "B" does not. This would be a problem if the sound would as a result not be produced. However, the GS Format, in order to assure compatibility when changing Tones, provides a system of substitution. Additionally, in order to allow a device to have its own unique Tones not defined in the GS Format, a device-specific area (GS Bank Numbers 64 to 127) has been set aside.



⇨ *The JW-50's Preset and User Tones are located in the device-specific area.*

Tone Assignments in the General Area

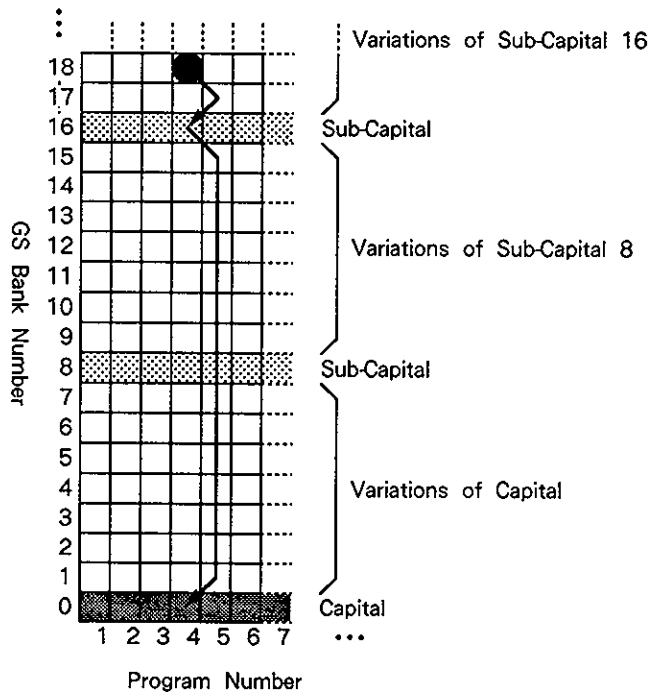
Before continuing with the explanation of Tone substitutions, let's first look at how the Tones in the General Area (GS Bank Numbers 0 to 63, Program Numbers 1 to 128) are organized.

The 128 fundamental Tones in the General Area are located in GS Bank Number 0. Such fundamental Tones are known as **"Capital Tones."** The Capital Tones are organized by instrument type as follows:

Program Number	Type of Instrument Sound	Program Number	Type of Instrument Sound
1 to 8	Piano	65 to 72	Lead
9 to 16	Chromatic percussion	73 to 80	Pipe
17 to 24	Organ	81 to 88	Synth lead
25 to 32	Guitar	89 to 96	Synth pad, etc.
33 to 40	Bass	97 to 104	Synth SFX
41 to 48	Strings & Orchestra	105 to 112	Ethnic
49 to 56	Ensemble	113 to 120	Percussive
57 to 64	Brass	121 to 128	SFX

Tones similar to a Capital, yet providing different nuances, are located in the vertical columns in the Tone Map. The representative ones within each column are known as **"Sub-Capitals,"** and are located at every eighth GS Bank Number, beginning with number eight. The other Tones ("Variations") are located above the Capital (or Sub-Capital) that it most closely approximates in terms of tone quality.

Note, however, that Tones in the SFX group (Program Numbers 121 to 128) are not compatible with other Tones, and thus do not have any Sub-Capitals. For this reason, the Tones are arranged in order with the Capitals from GS Bank Number 0.



** For every Capital Program Number there is a Tone. However, not every Program Number for Sub-Capitals and Variations will have a Tone.*

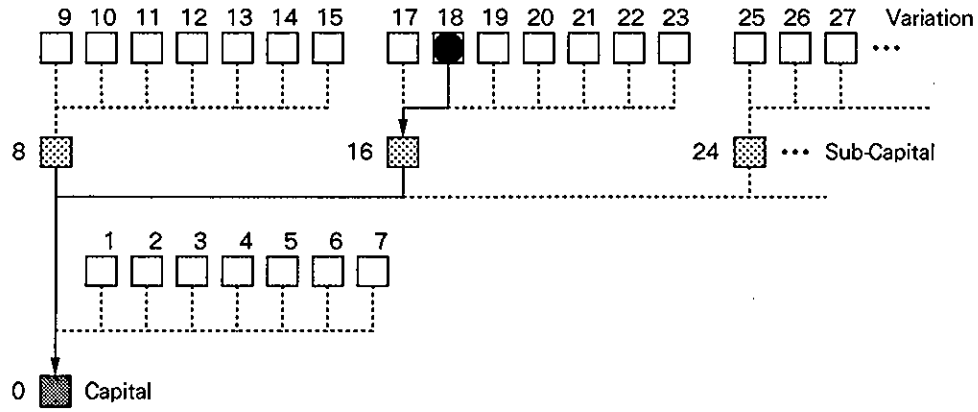
Substitutions

In order to maintain compatibility when selecting Tones (even though the devices may not share all the same Tones), the Tones in the General Area with Program Numbers from 1 to 120 and GS Bank Numbers 0 to 63, follow a system of substitution.

Although the Tone organization is standardized under the GS Format, Tones other than Capitals can vary considerably from device to device. As a result, certain Tones may not exist in the receiving unit. That is why the GS Format includes a **substitution** scheme. The substitute Tone is selected based on its similarity to the Tone that was requested.

Now, exactly which Tone will sound if there is no Tone at the selected location?
For example, if a request for GS Bank Number 18/Program Number 4 has been made, that Tone will of course be heard if it exists. If there is no Tone at that location, however, the Tone residing at the location immediately below, the Sub-Capital (GS Bank Number 16), will be heard in its place. If by chance there is no Tone in this Sub-Capital location either, the Capital Tone will sound (refer to the illustration on the previous page).

Here let's change our perspective a little and look at how a single vertical column operates. If there is no Tone at the specified location, the request will be directed downward, stepping through prospective Tones until, if nothing similar is found, the Capital Tone is reached. You should thus be able to see that a substitute sound will always be heard, even though the exact request for a Tone could not be filled.

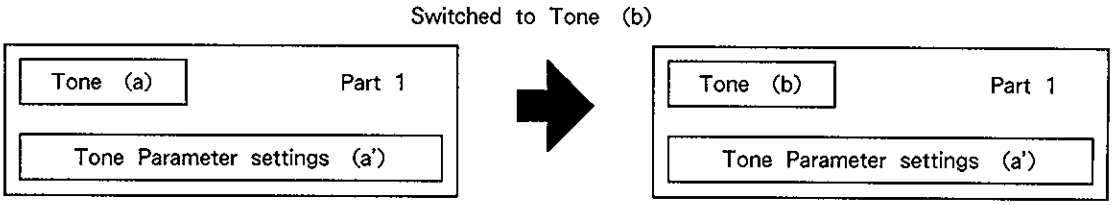


Note that no substitutions will be made for any Tones that cannot be found in the SFX group (Program Numbers 121 to 128), even though they reside in the General Area. This is because it would be totally inappropriate, for example, to have a "chirping bird" sound as a substitute when you originally requested "barking dog." For similar reasons, no substitutes are attempted for any Tones in the device – – specific area.

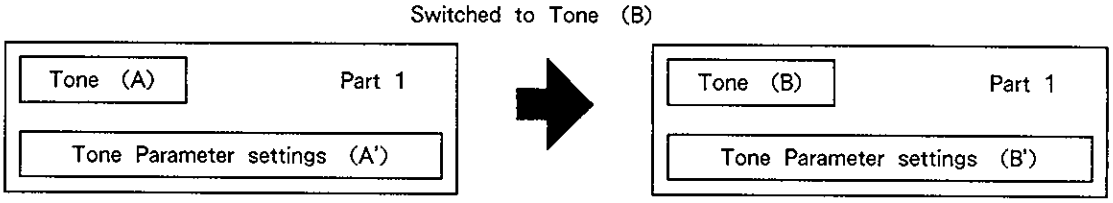
Handling of Tone Parameters

When operating in conformity with the GS Format, the JW-50's Preset and User Tones, and the Tone Parameters are handled differently.

Under the GS Format, Tone Parameters are treated as parameters that apply individually to Parts, the same as Pan or Volume. For that reason, the settings for the Tone Parameters will not change when a new Tone is selected. For example, suppose you have selected Tone "a" and have made changes to its parameter settings. If you then switch to Tone "b," the parameter settings will still reflect the previous ones, and Tone "b" will sound in accord with the edited Tone Parameter settings that were originally intended for Tone "a."
On the JW-50, the GS Tones perform in a manner that complies with the GS Format.



In comparison, the JW-50's Preset and User Tones can be thought of as being GS Tones to which the settings for the Tone Parameters have been included. Therefore, the Tone Parameter settings will also change to properly reflect any change in a new Tone. This avoids the problem of Tones sounding in accord with Tone Parameter settings that actually belong to a previously selected Tone.



⇨ *The Preset/User Tones recorded within a song can be converted to tone data which is compatible with the GS Format using the Tone Data Conversion feature (☞ p. 4-37).*

Changing Drum Sets Using MIDI

Drum Sets are changed using Program Change messages.

Under the GS Format, Track 10 is normally used for the Drum Part. On the JW-50 as well, Track 10 (Part 10) serves as the Drum Part. Track 16, however, can also be used as a second Drum Part.

Like the other Parts, Drum Parts follow a system of substitution designed to maintain compatibility. In the Drum Part, Program Numbers 1 to 48 in the General Area follow a system of substitution. (On the JW-50, Program Numbers within the range of 1 to 64 provide for substitution.) The treatment of Capitals, Sub-Capitals and Variations is the same as that of Tones.

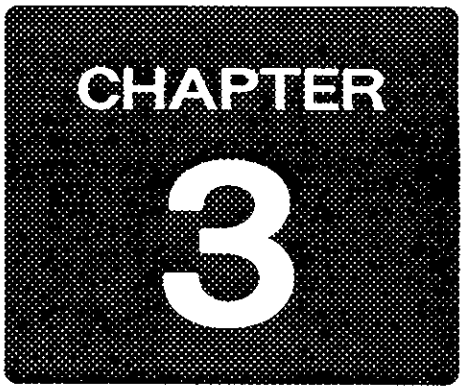
* *If the GS Bank Number for the Drum Track is not 0, no change in the Drum Set will occur even if a Program Change message is received.*

GS Reset

The GS Reset is a form of data which sets the unit to comply with the fundamental GS Format settings.
All SMF Music Data developed by Roland, as well as other commercially available GS Format-compatible song data disks, have GS Reset data encoded at the beginning of every song. This helps to ensure that a song will be reproduced identically on any GS compatible device. When such song data is played on the JW-50, its settings will be changed so they comply with the fundamental GS Format settings. The JW-50 will also be set to conform to GS whenever it receives a GS Reset message that has arrived from an external MIDI device.

* *The JW-50 can also be set to the fundamental GS Format settings from the front panel (☞ p. 3-45, p. 4-62).*
* *Once set to comply with the GS Format, a number of features normally available on the JW-50 will be disabled, such as the Channel Aftertouch function. In order to revert to the instrument's normal operating condition, you must perform a "JW Reset" (☞p. 3-45, p. 4-62).*

MEMO



OPERATION GUIDE

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1. Playing From A Keyboard

Track Selection

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② Kbd Track	Select a track.

Alternatively

① [TONE]	Select the Tone screen.
② Track	Select a track.

Tone Selection

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② Kbd Track	Select a track (other than the Drum track).
③ ( )	Select a Tone Group (P or U), then a Tone Number.

Playing Percussion Instruments

● Drum Set Selection

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② Kbd Track	Select the Drum track (track 10).
③ ( )	Select a Drum Set Number.

● Playing a drum voice below key C2

Lower the keyboard range by one octave.

① [TUNE/FUNC]	Select the Tune/Function 1 screen.
② Oct Transpose	Set to [− 1 Oct].
③ [SEQUENCER]	Select the Basic screen in the Sequencer mode.

● Using track 16 as a Drum track

To use the SFX set, or two Drum sets at the same time, you must use track 16 as a second Drum track.

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② [F1] TrckPrm	Select the Track Parameter screen.
③ Track	Select track 16.
④ Type	Select [Drum].
⑤ [WRITE]	The screen responds with "Are you sure ?".
⑥ [F4] YES	What you have set is written into the Song and the screen will read "Completed."
⑦ [EXIT]	Return to the Basic screen in the Sequencer mode.

Using Performance Controlling Functions

● Aftertouch

On the JW-50, Aftertouch controls brilliance. The more pressure you apply to the keys after they are played, the brighter the tone.

● Pitch Bend/Modulation Lever

Moving the lever to the right and left extremes will increase or decrease the pitch of notes played. Pressing the lever forward will produce a vibrato effect.

● Setting the amount of pitch change:

The actual amount of change (Pitch Bend Range) can be set individually for each track.

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② Kbd Track	Select a track.
③ [F1] TrckPrm	Select the Track Parameter screen.
④ Bend Range	Set the maximum amount of pitch change (0 to 24; in semitone units).
⑤ [EXIT]	Return to the Basic screen in the Sequencer mode.

● Using the Hold effect

Connect a pedal switch to the PEDAL HOLD Jack on the JW-50.

You can then obtain the Hold (sustain) effect for as long as you depress the pedal. Note, however, that the Hold effect can only be obtained for sustain-type sounds, such as organ or strings. Sounds which normally decay rapidly (eg., most percussion sounds) cannot be sustained.

** When choosing a pedal switch, make sure it is one that activates only when the pedal is depressed. Be especially careful if you are going to use a pedal switch not made by Roland, since it could likely be of the sort that turns on/off in reverse.*

● Controlling the volume (expression) with a pedal

Connect an Expression pedal to the EXT CONTROL Jack on the JW-50. The volume of the track selected by the keyboard can then be controlled by the pedal. To change the function assigned to the pedal:

① [TUNE/FUNC]	Select the Tune/Function 1 screen.
② [F2] T/Func2	Select the Tune/Function 2 screen.
③ Ext Control Assign	Select [Expression].
④ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

** Before you disconnect the Expression pedal from the JW-50, be sure to switch JW-50 off.*

● Controlling the Vibrato (Modulation) with a pedal

① [TUNE/FUNC]	Select the Tune/Function 1 screen.
② [F2] T/Func2	Select the Tune/Function 2 screen.
③ Ext Control Assign	Select [Modulation].
④ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

⑤ Connect the Expression pedal to the EXT CONTROL Jack.

The vibrato depth can now be controlled by the pedal.

** Before you disconnect the Expression pedal from the JW-50, be sure to switch JW-50 off.*

** While set to use a pedal, the panel's lever will not provide control over the vibrato.*

● Controlling the brightness of a sound (Aftertouch) using a pedal

① [TUNE/FUNC] Select the Tune/Function 1 screen.
② [F2] T/Func2 Select the Tune/Function 2 screen.
③ Ext Control Assign Select [C.After].
④ [SEQUENCER] Return to the Basic screen in the Sequencer mode.
⑤ Connect the Expression pedal to the EXT CONTROL Jack.
Now the brightness (tone quality) of sounds can be controlled by the pedal.

** Before you disconnect the Expression pedal from the JW-50, be sure to switch JW-50 off.*
** While set to use a pedal, the keyboard will not provide control over the aftertouch.*

The Reverb and Chorus Effects

Reverb is an effect which adds spaciousness to sounds. Chorus is an effect which results in sounds that are perceived as being warmer and fatter.
Chorus and reverb are set for each song, and the extent to which they will be applied (Send Level) can be set separately for each track. However, note that any setting changes are only temporary. Settings will revert to their former values if you switch to a different song, etc. If you wish to keep your changes as part of the song, you should perform a "Write" procedure before leaving each screen in which you made settings.

● Changing the Reverb Setting

① [EFFECTS] Select the Reverb Send screen.
② [F2] RevPara Select the Reverb Param screen.
③ Set each parameter. (☞p. 4-55)
④ [WRITE] The screen responds with "Are you sure ?".
⑤ [F4] YES Write what is currently set in the screen into the song. When the procedure is complete, the screen will read "Completed."
⑥ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

● Changing the extent of the reverb (Reverb Send Level) in each track

① [EFFECTS] Select the Reverb Send screen.
② Reverb Adjust the extent of the reverb for each track.
③ [WRITE] The screen responds with "Are you sure ?".
④ [F4] YES Write what is currently set in the screen into the song. When the procedure is complete, the screen will read "Completed."
⑤ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

● Changing the Chorus Setting

① [EFFECTS] Select the Reverb Send screen.
② [F4] ChrPara Select the Chorus Param screen.
③ Set each parameter. (☞p. 4-56)
④ [WRITE] The screen responds with "Are you sure ?".
⑤ [F4] YES Write what is currently set in the screen into the song. When the procedure is complete, the screen will read "Completed."
⑥ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

● Changing the extent of the chorus (Chorus Send Level) in each track

① [EFFECTS]	Select the Reverb Send screen.
② [F3] ChrSend	Select the Chorus Send screen.
③ Chorus	Adjust the extent of the chorus for each track.
④ [WRITE]	The screen responds with "Are you sure ?".
⑤ [F4] YES	Write what is currently set in the screen into the song. When the procedure is complete, the screen will read "Completed."
⑥ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

Tuning

To play the JW-50 together with another musical instrument, tune the sound source of the JW-50 to match the pitch of the other instrument.

① [TUNE/FUNC]	Select the Tune/Function 1 screen.
② Master Tune	Tune the JW-50 as you play the A4 (middle A) key.
③ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

Transposition

Transposition allows you to shift the pitch of the entire keyboard allowing you to play in different keys without altering your fingering. Meanwhile, the notes to be played in a song can also be transposed.

① [TUNE/FUNC]	Select the Tune/Function 1 screen.
② Key Transpose	Set the amount of transposition (− 24 to +24; in semitone units).
③ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

Turning off keyboard Aftertouch

① [TUNE/FUNC]	Select the Tune/Function 1 screen.
② [F2] T/Func2	Select the Tune/Function 2 screen.
③ Keyboard Switch (C.After)	Set to [Off].
④ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

** The Aftertouch function written into a song is not turned off with this procedure.*

** What you have set above will be retained even after the unit is switched off.*

2. Song Play

ROM Play Songs

To play the Demo songs stored in ROM (Read Only Memory):

① Press [WRITE] and [SONG EDIT] simultaneously to select the ROM Play screen.

② Song — Select the first song to be played.

③ [PLAY] — Start playback. The two songs will play repeatedly any number of times.

④ [STOP] — Stop playback.

⑤ [EXIT] — Return to the Basic screen in the Sequencer mode.

Loading a JW-50 song from a disk

① Insert the song disk into the JW-50.

② [DISK] — Select the Disk Menu screen.

③ [F1] Load — Select the Load screen.

④ Type — Be sure that [1 JW-50 Song Data] is selected.

⑤ From Disk — Select the song you wish to load.

⑥ To Internal Song — Select the destination Song Number.

⑦ [F1] Execute — Load the song. When loading is complete, the screen will read "Completed."

⑧ To load more than one song, repeat steps ⑤ to ⑦.

⑨ [SEQUENCER] — Return to the Basic screen in the Sequencer mode.

* *If any song data exists at the destination Song Number, the message "Are you sure ?" will appear in the screen after step ⑦. Press [F4] YES to continue loading.*

⇨*If the User Tone set (which corresponds to the song) is also stored on the disk, you can load it together with the song by pressing [F2] +Tone in step ⑦.*

Loading a song of Standard MIDI File from a disk

You can convert Standard MIDI Files to JW-50 song data as they are loaded. (For a detailed explanation, refer to "Concerning Song Data" (☞p. 2-4).) To convert Standard MIDI Files on the JW-50, follow this procedure:

① Insert the song disk into the JW-50.

② [DISK] — Select the Disk Menu screen.

③ [F1] Load — Select the Load screen.

④ Type — Select [2 SMF Song Data].

⑤ From Disk — Select the song you wish to load.

⑥ To Internal Song — Select the destination Song Number.

⑦ [F1] Execute — Load the song. When loading is complete, the screen will read "Completed."

⑧ To load more than one song, repeat steps ⑤ to ⑦.

⑨ [SEQUENCER] — Return to the Basic screen in the Sequencer mode.

* *If any song data exists at the destination Song Number, the message "Are you sure ?" will appear in the screen after step ⑦. Press [F4] YES to continue loading.*

Playing a Song

● Song Selection (in the Basic screen in the Sequencer mode)

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② Song	Select a Song Number.

● Song Selection (in the Song Information screen)

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② [F2] SngInfo	Select the Song Information screen.
③ Song	Select a Song Number.
④ [EXIT]	Return to the Basic screen in the Sequencer mode.

* *In the Song Information screen, you can determine whether the User Tone set in the internal memory and the User Tone set that corresponds to the song are the same. If they are different, load the User Tone set that corresponds to the song (☞p. 4-4).*

● Song Play

① [PLAY]	Start playback.
② [STOP]	Playback stops when [STOP] is pressed. Pressing [PLAY] again will start playback from where the song was stopped.

* *Song Play cannot be performed from some displays.*

● Start/Stop Playback using a pedal

① [TUNE/FUNC]	Select the Tune/Function 1 screen.
② [F2] T/Func2	Select the Tune/Function 2 screen.
③ Pedal Switch Assign	Select [Start/Stop].
④ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

⑤ Connect a pedal switch to the PEDAL SWITCH Jack on the JW-50.
You can now start and stop playback with the pedal.

* *Before connecting a pedal switch, make sure it is one that activates only when the pedal is depressed. Be especially careful if you are going to use a pedal switch not made by Roland, since it could be one of those that turns on/off in the reversed order.*

● Measure Locate

In the Basic screen in the Sequencer or Mixer screen, you can specify a Measure Number and then move to it.

[BWD]	You can return to the bar line just before the current bar.
[FWD]	You can move to the next bar line.
[RESET]	You can return to the beginning of the song.
[SHIFT] + [FWD]	You can move to the end of the song.

* *To place the settings for the Track parameters and effects for all the tracks back to the way they were before the song was changed, hold down [SHIFT] and press [RESET].*

● Playback from the middle of a song

① Move to the position where you wish playback to begin.

② [SHIFT] + [STOP] Update the data. Wait until the message "Now Working" disappears.

③ [PLAY] Start playback.

● Automatic Update

If you wish to update a song automatically, and start playback of a Song just by pressing [PLAY], follow this procedure:

① [TUNE/FUNC] Select the Tune/Function 1 screen.

② [F2] T/Func2 Select the Tune/Function 2 screen.

③ Auto Update Select [On].

④ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

** Using the Automatic Update mode may result in momentary delays after [PLAY] is pressed. This is because it requires time to update the data.*

● Repeat playback of a specified section of a song

① [SEQUENCER] Select the Basic screen in the Sequencer mode.

② [LOOP] The Loop Range is shown in the upper right corner of the screen.

③ Loop *** – *** Set the Loop Range (the section that should be played repeatedly).

④ [PLAY] Start playback from the beginning of the Loop Range.

Tempo Change

① [SEQUENCER] Select the Basic screen in the Sequencer mode.

② ♩ = Adjust the tempo.

⇨*The tempo of a song can also be changed in the Mixer screen.*

Not to change the tempo with recorded tempo data

Change the [P] (Play) that appears to the right of "♩ =" to [M] (Mute).

Track Muting

① [SEQUENCER] Select the Basic screen in the Sequencer mode.

② State Move the cursor to the track you wish to mute, then change [P] (Play) to [M] (Mute).

Track Volume Balance Control with the Faders

** If the volume settings have not been recorded, they will revert to what they originally were if you change to another song, or perform any similar operation.*

● **To control the volume of all the tracks using the faders:**

① [MIXER] Select the Volume screen.
② [COMPU/MANUAL] Set "Mode" of all the tracks to [M] (Manual).
(The MANUAL Indicator will be lit.)
③ [TRACK SEL] Select the tracks (1 – 8/9 – 16) to be controlled by the faders.
④ By moving the fader of the corresponding track, set the symbol of the current position of the fader to cover the symbol of the current volume.
⑤ Adjust the volume with the fader.

⇨*If you wish to monitor the volume as a number, press* [F2] *Vol Num in the Volume screen.*
⇨*In Basic screen in the Sequencer, the volume adjustment can also be made in a similar way.*

● **Adjusting the volume of a specific track with the fader**

① [MIXER] Select the Volume screen.
② [COMPU/MANUAL] Set "Mode" of all the tracks to [C] (Compu). (The COMPU Indicator will be lit.)
③ [TRACK SEL] Select the tracks (1 – 8/9 – 16) you wish to control with the faders.
④ Mode Change "Mode" of the tracks to be controlled from [C] (Compu) to [M] (Manual).
⑤ By moving the fader of the corresponding track, set the symbol of the current position of the fader to cover the symbol of the current volume.
⑥ Adjust the volume with the fader.

⇨*If you wish to monitor the volume as a number, press* [F2] *Vol Num in the Volume screen.*

Tuning to another Musical Instrument

To play the JW-50 with another instrument with a fixed tuning, such as an acoustic piano, you can tune the JW-50's sound module to the pitch of that instrument.

① [TUNE/FUNC] Select the Tune/Function 1 screen.
② Master Tune Adjust the pitch while playing the A4 (middle A) key.
③ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Transposition

To play a song in a different key (without altering your keyboard fingering), you can shift the pitch using the Key Transpose function. Key Transposition will shift the pitch of the sounds played from the keyboard.

① [TUNE/FUNC] Select the Tune/Func 1 screen.
② Key Transpose Transpose to the desired key (– 24 to + 24; in semitone units).
③ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Continuous Playback of Songs on a Disk (Chain Load)

Chain Load is a feature which allows you to specify a selection of songs on disk that you wish to load and play in a certain order. If you have set the order of the songs, you can play them simply by pressing [PLAY].
The settings for "Chain Load" can be saved onto a disk as well.

● Setting the sequence of songs to be played:

① Insert the disk containing the songs you wish to Chain Load. Be sure the protect tab on the disk is set to OFF.

② [CHAIN LOAD] Select the Chain Load screen.

③ Loop Mode Determines whether all the songs will play through once and stop, or play repeatedly.
[One Way] : The unit stops playback after all the songs have been played once.
[Repeat] : The songs are played repeatedly.

④ Song Name Select songs in the order you wish them to play. Move the cursor to the "End" position, then select a song with the Dial. Press [ENTER] to input the selected song, then move to the next step.

⑤ Start This sets how each song in the Chain should start playing.
[Auto] : Songs start playback automatically.
[Manual] : Each song will start playback only when you press [PLAY].
When you have selected a song, [AUTO] is automatically selected ("Auto" is displayed in the screen). If you wish to retain the Auto mode, simply press [ENTER]. If you wish to change to [Manual], move the cursor to select [Manual], then press [ENTER].

⑥ By repeating steps ④ and ⑤, set the order of the songs to be played.

<Altering a Song Chain>

To change a song you have entered into a Chain, move the cursor to the song and change it.
To delete a song in the middle of a Chain, move the cursor to the relevant step, then press [F4] Delete.
To add a song in the middle of a Chain, move the cursor to the relevant step, then press [F3] Insert. The Song that is inserted will be identical to the one at the Step where the cursor is located. If you wish to insert a different song, select a different one.

● Song Chain Playback

From the Chain Load screen:

① Move the cursor to the first step. To play the Song Chain from the middle, move the cursor to the relevant step.

② [PLAY] The JW-50 will load the first or middle song as you have set.
When "Start" is set to [Auto], the JW-50 will automatically start playback of the song.
When "Start" is set to [Manual], press [PLAY] to start playback.

When one song is finished, the next will be loaded.

<When the last song is finished>

When "Loop Mode" is set to [One Way], the unit stops playing.
When "Loop Mode" is set to [Repeat], the first song is loaded again and the Chain plays again.

<During playback>

[STOP] Stops playback.
[FWD] Stops playback of the current song and loads the next song.
[BWD] Returns to the beginning of the current song.

● Saving the settings for Chain Load onto a disk

Only one set of settings for Chain Load can be saved onto any particular disk.

From the Chain Load screen:

① [F2] SaveSet — The screen responds with "Are you sure ?".

② [F4] YES — The settings for Chain Load are saved. When the procedure is complete, the screen will read "Completed."

● Loading the settings for Chain Load from a disk

The Chain Load settings saved on a disk will be automatically loaded if you insert the disk into the JW-50 and press [CHAIN LOAD].

If, after editing the settings for Chain Load, you wish to retrieve the Chain Load settings stored on a disk, follow this procedure:

① [F1] LoadSet — The screen responds with "Are you sure ?".

② [F4] YES — The settings for Chain Load are loaded. When the procedure is complete, the screen will read "Completed."

Jump to the specified position (Locate Function)

The Locate function allows you to specify points at any position within a song and then jump to those points. Up to 10 (0 to 9) "Locate Points" can be set.

● Setting Locate Points (while the song is playing)

① Play a song from the Basic screen in the Sequencer mode.

② [LOCATE] — Select the Locate screen.

③ Locate — Specify the Locate Point Number you wish to set.

④ Press [F2] SetNow at the position where you wish to set the Locate Point. The point where you pressed [F2] is registered as a Locate Point and the Basic screen in the Sequencer mode is recalled.

⑤ If you wish to register other Locate Points, repeat steps ② to ④.

⑥ [STOP] — When you have finished setting all the necessary Locate Points, stop playback of the song.

● Setting Locate Points (when the song is stopped)

① [LOCATE] — Select the Locate screen.

② Locate — Specify the Locate Point Number you wish to set.

③ Position — Specify the measure/beat/clock where you wish to set the Locate Point.

④ If you wish to register other Locate Points, repeat steps ② and ③.

⑤ [SEQUENCER] — Return to the Basic screen in the Sequencer mode.

● Jumping to the Locate Points

① [LOCATE] — Select the Locate screen.

② Locate — Specify the Locate Point Number you wish to jump to.

③ [F1] Jump — You will jump to the Locate Point you have specified.

* *If you wish to play a song from the Locate position, execute the Update procedure by pressing [STOP] while holding [SHIFT] down before playing the song.*

3. Song Creation (Basic)

Erasing a Song

To erase a song:

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② [F2] SngInfo	Select the Song Information screen.
③ Song	Select the song to be erased.
④ [F1] Clear	The screen will read "Are you sure ?".
⑤ [F4] YES	The selected song is erased.
⑥ [EXIT]	Return to the Basic screen in the Sequencer mode.

Recording a keyboard performance (Real-Time Recording)

● Preparation

Before recording, select the track and the recording method:

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② Song	Select the Song Number to be recorded.
③ Kbd Track	Select the track is to be recorded.
④ ( )	Select a Tone. (In Real-Time recording, the Tone selected is written at the position where the recording starts.)
⑤ M=	Specify the measure where the recording is to start.
⑥ [REC]	Select the Rec Standby screen.
⑦ Rec Type	Select [Replace] or [Mix] recording. If it is the first time you are recording onto the track, either method will do. To overwrite the data on a track, select [Replace]. To layer (mix) new data with existing performance data, select [Mix].
⑧ Rec Start	Select how the recording will start: [Count 2] : The recording starts after a two measure count-in. [Count 1] : The recording starts after a one measure count-in. [Count 0] : The recording starts immediately. [Keyboard] : The recording starts the moment a key on the keyboard is pressed.
⑨ New Meas Beat	You must set the beat of the measure before starting to record new measures. If you wish to use the beat currently shown in the screen, you need not set it.
⑩ ♩ =	Adjust the tempo of the metronome if you will use it for recording.

● Recording

① When you have set the "Rec Start" parameter to [Count 2], [Count 1] or [Count 0], press [PLAY] to start recording. When you have selected [Keyboard], you can start recording by pressing any key on the keyboard.

② [STOP] When the performance is finished, stop recording.

Recording a Drum Performance (Loop + Mix Recording)

Drum parts usually consist of several measures of the same rhythm pattern, and therefore can be recorded in the rhythm pattern unit.

● Preparing for Recording

Before recording, set the track, Loop section and recording method:

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② Song	Select the Song Number to be recorded.
③ Kbd Track	Select the Drum track.
④ ( )	Select a Drum set. (In Real-Time recording, the Drum set selected is written into the position where the recording begins.)
⑤ [LOOP]	The [LOOP] indicator is lit and the Loop section is shown in the upper right corner of the screen.
⑥ Loop *** – ***	Set the first and the return-back measure to be recorded.
⑦ [REC]	Select the Rec Standby screen.
⑧ Rec Type	Select [Mix].
⑨ Rec Start	Select [Count 2].
⑩ New Meas Beat	You must set the beat of the measure before starting to record new measures. If you wish to use the beat currently shown in the screen, you need not set it.
⑪ ♩ =	Adjust the tempo of the metronome (if required).
⑫ Qnt=	If you wish to have your performance quantized (corrected) during recording, set the quantize value. The quantization value can also be changed during recording.

● Recording

① [PLAY]	Start recording. After the metronome counts in 2 measures, the recording starts from the first measure.

② Record each percussion instrument one after another.

③ [STOP]	When the drum performance is finished, stop recording. The Basic screen in the Sequencer mode returns.

④ Set the Loop section for the next rhythm pattern, then continue to record in the same way. Rhythm patterns can be copied to different locations in a song. (☞ p. 3-29, p. 4-24)

⑤ When you have completed recording, press [LOOP] (the [LOOP] indicator goes out).

* *With this recording method, do not record any other data except for keyboard related performances (Note Events). If you record such data as pitch changes (caused by moving the Pitch Bend Lever, etc,) they will not be played back properly.*

<To re-record a part of a performance>

Do as follows during recording:

① [F1] Erase	Select the Realtime Erase screen.

② Press the key for the instrument to be erased. As long as the key is depressed, the instrument sound will be erased.

To erase the sounds in a certain keyboard range, press the highest and the lowest keys, thereby defining the range. As long as these two keys are pressed, the sounds in that range are erased.

To erase all the percussion sounds, press [F1] EraseAl. While [F1] is pressed, all the sounds are erased.

③ [EXIT]	Recall the previous recording screen.

④ Record new data.

Recording a song note by note (Step Recording)

Step Recording is a method of recording where the instrument sounds are entered note by note.

● Preparing for Recording

Before recording, select the track:

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② Song	Select the Song Number to be recorded.
③ Kbd Track	Select the track to be recorded.
④ ( )	Select a Tone.
⑤ [MICRO/STEP]	Select the Microscope screen.
⑥ □/□/□	To record from the middle of a song, specify the position (measure/beat/clock) using the Numeric Keys.
⑦ [REC]	Select the Step Rec screen.

<To set the Velocity (playing strength) to a fixed value>

From the Step Rec screen:

① [F1] Rec Prm	Select the Step Rec Parameter screen.
② Velocity Mode	Select [Fix].
③ Fixed Velocity	Set the Velocity value to be entered.
④ [EXIT]	Return to the Step Rec screen.

<Changing Beats>

You must set the beat of the measure before starting to record new measures.

From the Step Rec screen:

① [F1] Rec Prm	Select the Step Rec Parameter screen.
② New Meas Beat	Set the beat.
③ [EXIT]	Return to the Step Rec screen.

● Recording

① Step	Press the Numeric Key that corresponds to the note you wish to enter.
② Gate	Set the Gate Time Factor. The Gate Time Factor determines the Gate Time (the amount of time between the moment a key is pressed and the moment it is released) a note should have. For example, when the Step Time is 60 (an eighth note) and the Gate Time Factor is 80%, the actual Gate Time of the note will be 48 (80% of an eighth note). Setting the Time Factor to lower values will create a staccato effect, while setting it higher values will create a legato effect.

③ Press and release the key for the note to be entered. When you release the key, the Note Number (the position of the key), Velocity (playing strength) and Gate Time are entered. The next note can then be entered.

<When you have entered a wrong note>

Press [BWD] or [F5] StpBack. The cursor will return to the previous note (Note Event), allowing you to enter the correct note.

<Setting a note (Step Time) with a clock number>

To enter notes other than those printed above the Numeric Keys, press [F4] Input. Specify the Step Time value with a clock number. Study the following table and set the desired clock number. If you wish to enter one of the note values printed above a Numeric Key, press [F4] Input again.

Note	Step Time/Numeric Key		Note	Step Time/Numeric Key	
𝅝	480	[9]	♩	60	[5]
𝅗𝅥.	360		♩₃	40	[4]
𝅗𝅥	240	[8]	𝅘𝅥𝅯.	45	
𝅗𝅥₃	160		𝅘𝅥𝅯	30	[3]
♩.	180		𝅘𝅥𝅯₃	20	[2]
♩	120	[7]	𝅘𝅥𝅰	15	[1]
♩₃	80	[6]	𝅘𝅥𝅰₃	10	
𝅘𝅥.	90				

<To enter a rest equal to the Step Time>

To enter a rest that is equal in duration to the Step Time currently shown in the screen, press [F2] Rest.
If you have specified the Step Time with a note value (printed above the Numeric Keys), you can enter the rest by positioning the cursor to "Step" and then pressing the relevant Numerical Key while holding [SHIFT] down.

* *When a rest has been entered, the position for the next note entry will be advanced by the number of clocks used by the rest.*

<To enter rests up to the end of a measure>

Press [FWD] or, press [F1] NxtMeas while holding [SHIFT] down. The beginning of the next bar will appear.

<To enter a chord>

Press and release the keys in the chord.

<To enter a Tie>

Press [F3] Tie. Pressing [F3] will increase the length of the preceding Step Time value by the length currently shown in the screen. The Gate Time will increase correspondingly.

<To enter a note with a number>

① Press the [◀] cursor key and the cursor will move to the Note (Note Number), and the default value will be shown.
② Change the Note Number then press [ENTER]. The cursor will move to Vel (Velocity).
③ Edit the value of the Velocity then press [ENTER]. The cursor will move to Gate (Gate Time).
④ Edit the value of the Gate Time then press [ENTER].
It will advance by the displayed Step Time value and await input of the next Note Event. The value of the Note Event shown in the screen becomes the same as that of the Note Event entered just before it.

⇨*To enter a chord with the Numeric Keys, move the cursor to Gate (Gate Time), then press [ENTER] while holding [SHIFT] down. In this way, you can enter the next note at the same position (step time is 0) where the first note was entered.*

⇨*Before you enter the Gate Time, you can continue to change the values in the same line by moving the cursor.*

Before using a brand new disk (Formatting a Disk)

A brand new disk, or a disk previously used by another device, cannot store JW-50 data as it is. If you wish to save the JW-50's data onto such a disk, you must format the disk first. When you format a disk, you can also assign a disk label (name) to it.

* *Please use 3.5 inch micro floppy disks (2DD). Other disks cannot be used.*
* *Formatting a disk will automatically erase any existing data on the disk.*

① Insert the disk (with the protect tab set to OFF) into the JW-50.

② [DISK]	Select the Disk Menu screen.
③ [F4] Format	Select the Format screen.
④ Label	Assign a disk label (up to 11 characters).
⑤ [F1] Execute	The screen displays the message "Are you sure ?".
⑥ [F4] YES	Format the disk. When the formatting procedure is complete, the screen will read "Completed."
⑦ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

Saving a Song onto a Disk

To save song data onto a formatted disk:

① Insert the disk (with the protect tab set to OFF) into the JW-50.

② [DISK]	Select the Disk Menu screen.
③ [F2] Save	Select the Save screen.
④ Type	Be sure that [1 JW-50 Song Data] is selected.
⑤ From Internal Song	Specify the Song Number to be saved.
⑥ [<]	Assign a Song Name (using up to 12 characters).
⑦ [F1] Execute	The screen responds with "Are you sure ?".
⑧ [F4] YES	Save the data onto the disk. When the saving procedure is complete, the screen will read "Completed."
⑨ [SEQUENCER]	Return to the Basic screen of the Sequencer mode.

4. Song Creation : The Backing Feature

Song Creating Procedure

The Backing feature creates accompaniment with 4 different instrument parts (Drums/Bass/Instrument 1/Instrument 2). To create a song using the Backing feature, follow this procedure:

① Create Blocks needed for accompaniment.
Each "Block" contains 4 measures of accompaniment. Up to 10 Blocks, A to J, can be created. To create a Block, you can select the Music Style you like and the chord progression for the performance.

The unit contains 30 different Music Styles and Preset Chord Changes (chord progressions consisting of 4 measures). For each of the Music Styles and Preset Chord Changes, there are a number of types : Original, Variation 1 and Variation 2. For chord progressions, Chord Changes can be used with or without modification. If you use an original chord progression frequently, it may be a good idea to write it into a User Chord Change.

⇨*Music Styles provide a collection of essential elements from a wide range of music genres; for Jazz, Rock, Pop etc.*

② Record the Block data into the sequencer.
There are two types of recordings as shown below.
1) Blocks are recorded as you select them in real-time.
2) The order of Blocks is first created in the Make Song screen. The pre-set sequence is then recorded into the sequencer.

⇨*You can record the phrases you have played on the keyboard into the sequencer as well as the Blocks.*

③ Blocks recorded in the sequencer can be handled in the same way as the usual performance data. That is, you can add other instruments or edit whenever necessary.

* *Since GS Tones are employed for the backing provided by Blocks, the Tone Parameters are handled in a manner that is different than that with Preset or User Tones. For that reason you need to be careful, since if you use a User Tone along with a track in which backing has been recorded (such as during editing), the manner in which the other Tones sound could change.*

Playing the Blocks

● **To play the Blocks you have created:**

① [BLOCK]	Select the Block screen.
② [PLAY]	Start playing from the beginning of Block data.
③ [STOP]	Stop playing.
♩ =	Adjust the tempo.
Kbd	Select the Tone to be played on the keyboard.

* *The tempo and Tone are set for the entire set of Blocks.*

<When Prg is [Off]>
When Loop is On ([LOOP] Indicator is lit), the Blocks shown in the screen will be played repeatedly. When it is Off (the [LOOP] indicator is dark), the Block will only be played once.

<When Prg is [On]>

When Program is [On], the Blocks will be played in the sequence set in the Make Song screen.
When Loop is Off (the LOOP indicator is dark), the Song will automatically stop playing when the last Block has been played. When Loop is On (the LOOP indicator is lit), the first Block will start playing when the last Block has been played.

● To mute a Musical Instrument Part

Move the cursor to the Instrument to be muted, then change [P] (Play) to [M] (Mute).

Dr : Drum Part
Bs : Bass Part
I1 : Instrument 1 Part
I2 : Instrument 2 Part

* *The Mute function can be set for each Block.*
* *When Block data is recorded, the performance of the muted musical instrument part will not be recorded. However, the information as to which instrument is being used (Tone Change) is recorded.*

● To select a different Block

Use the Function Keys to select the Block you want. If you select a Block during playback, the new Block will be played after the current one is played.

Creating Blocks

● Selecting a Music Style

Select the Music Style which most closely matches the song you have in mind.
There are 30 Music Styles (P1 to P30), each of which is capable of three variations: Original (*1), Variation 1 (*2) and Variation 2 (*3). First, select the genre with the Style Number, then the type using "*1" to the right of the Style Name.

Style
[P1 Style Name *1] to [P30 Style Name *1] : Original
[P1 Style Name *2] to [P30 Style Name *2] : Variation 1
[P1 Style Name *3] to [P30 Style Name *3] : Variation 2

* *If you change Music Styles while playing, the new Music Style will be played after the current one is played.*

● Selecting a Chord Change (Chord Progression)

Choose the Chord Change most suitable for the selected Music Style.
There are two Chord Change variations; Preset Chord Changes (P) and User Chord Changes (U). For each of the Preset Chord Changes, there are three types; Original (*1), Variation 1 (*2) and Variation 2 (*3).
Select a Chord Change you like with the Chord Change Number. When you have selected one of the Preset Chord Changes, you must select the type with "*1" shown to the right of the Chord Change Name.

Chord

[P1 Chord Change Name *1] to [P30 Chord Change Name *1] : Preset Chord Changes (Original)
[P1 Chord Change Name *2] to [P30 Chord Change Name *2] : Preset Chord Changes (Variation 1)
[P1 Chord Change Name *3] to [P30 Chord Change Name *3] : Preset Chord Changes (Variation 2)
[U1 Chord Change Name] to [U50 Chord Change Name] : User Chord Changes

⇨*The Preset Chord Change that shares the same number as a Music Style consists of a chord progression that best matches that type of music.*

● To transpose the entire chord

↓ Key ↑ Pressing [DEC] decreases the pitch (in semitone units), while pressing [INC] increases the pitch.

● To change chords

To change the chord currently shown in the screen, use the Fader. Before selecting a new chord, you must assign a function to the Fader.

Fader Change the function assignment for the Fader:
[Root] : This selects the Root (root note) of the chord.
[Type] : This selects the type of chord.
[Bass] : This selects the bass note of the chord.

<To change the function assignment of the Fader using the relevant button>

[ROOT/TYPE] Select [Root] or [TYPE].
[Root] : The Root indicator lights.
[Type] : The Type indicator lights.

[SHIFT] + [ROOT/TYPE] Changes to [Bass].
Both indicators go out.

Storing the Chord Progression you have created

The chord progression data you have created can be stored in a User Chord Change. It may be a good idea to store a chord progression if you intend to use it frequently.

① [WRITE] Select the Write:Chord Change screen.
② Chord Change Number Select the destination Chord Change Number.
③ Assign a name to the User Chord Change (using up to 12 characters).
④ [F1] Execute The screen responds with "Are you sure ?".
⑤ [F4] YES Write the chord progression into the selected Chord Change Number. When the writing procedure is complete, the screen will read "Completed."
⑥ [BLOCK] Return to the Block screen.

Recording Blocks as you play them in sequence

● Preparing for recording

① In the Basic screen in the Sequencer mode, specify the destination Song Number and the first measure to be recorded.

②[BLOCK] Select the Block screen.

③ Function Key Select the first Block to be recorded.

④ Kbd If you wish to record a keyboard performance as well, select a Tone.

⑤ Prg Be sure that it is set to [Off].

⑥ Be sure that the [LOOP] indicator is lit. If it is dark, press [LOOP] to turn it on.

● Recording

①[REC] Select the recording stand-by mode. Check that the destination Song Number and the first measure to be recorded have been correctly set.

②[PLAY] After the metronome's two measure count-in, the first Block will be recorded. If you wish to record a keyboard performance as well, play the keyboard.

③ Change Blocks in the sequence you wish to record.

④ To finish recording, press [LOOP] while the last Block is still being played (the [LOOP] indicator goes out). The recording will stop when the last Block is finished.

⑤ Return to the Basic screen in the Sequencer mode, then check the recording.

Each Part performance will be recorded in the following tracks:

Drum Part	: track 10 (D)
Bass Part	: track 11
Instrument 1 Part	: track 12
Instrument 2 Part	: track 13
Keyboard Performance	: track 14
Beat for the performance	: beat track

Recording the Blocks after having set the order

● Preparing to record

From the Basic screen in the Sequencer mode, specify the destination Song Number and the first measure to be recorded.

● Setting the sequence of Blocks to be played:

①[MAKE SONG] Select the Make Song screen.

② Block Select the first Block to be played.

③[ENTER] Move the cursor to the next line.

④ Set the order of Blocks to be played by repeating steps ② and ③.

<To insert a Block>

To insert a Block, move the cursor to the line where the Block should be added, then press [F1] Insert. When [F1] is pressed, the Block that is inserted will be identical to the one at the Step where the cursor is located. Even if you wish to insert a different Block, you must first follow the above procedure, then change the Block to the one you want.

<To erase a Block>

To erase a Block, move the cursor to the line to be erase and press [F2] Delete.

<Recall Function>

The Blocks you have played in the Block screen (with Prog:Off) are temporarily stored in memory. Therefore, by pressing [F3] Recall, you can recall the the sequence of Blocks, then replace it with the data set in the Make Song screen. Pressing [F3] Recall again will retrieve the previous data.

● Recording

① [BLOCK] Select the Block screen.
② Kbd To record a keyboard performance as well, select a Tone.
③ Prg Be sure that it is set to [On].
④ Be sure that the [LOOP] indicator is dark. If it is lit, press [LOOP] to turn it off.
⑤ [REC] Select the recording stand-by mode. Check that the destination Song Number and the first measure to be recorded have been correctly set.
⑥ [PLAY] After the metronome's two measure count-in, the first Block will be recorded. If you wish to record a keyboard performance as well, play the keyboard. The recording will stop when the last Block is played.
⑦ Return to the Basic screen in the Sequencer mode, then check the recording.

Saving the settings for Backing onto a Disk

You can save the data of Blocks A to J and User Chord Changes onto a disk as a "Backing Set." Use a disk formatted for the JW-50 (☞p. 3-46, p. 4-52).

⇨*Settings for the Backing feature are retained even after the unit is switched off.*

① Insert the disk (with the protect tab set to OFF) into the JW-50.
② [DISK] Select the Disk Menu screen.
③ [F2] Save Select the Save screen.
④ Type Select [4 Backing Set].
⑤ [<] Name the backing set (using up to 8 characters).
⑥ [F1] Execute The screen responds with "Are you sure ?".
⑦ [F4] YES Save data. When the saving procedure is complete, the screen will read "Completed."
⑧ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Loading Backing Set data from a Disk

① Insert the disk into the JW-50.
② [DISK] Select the Disk Menu screen.
③ [F1] Load Select the Load screen.
④ Type Select [4 Backing Set].
⑤ From Disk Select the Backing Set you wish to load.
⑥ [F1] Execute The screen responds with "Are you sure ?".
⑦ [F1] YES Load the selected Backing Set into the JW-50. When the loading procedure is complete, the screen will read "Completed."
⑧ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

5. Song Creation (Advanced)

Re-recording part of a Song (Punch In/Out Recording)

The JW-50 allows you to record over a specified section of a song while it is being played back. This Real-Time recording method is called Punch In/Out Recording. Punch-In is changing from the playback to recording mode, while Punch-Out is returning from the recording to playback mode. For Punch In/Out recording, there are three different methods available.

Punch In/Out using the panel switches

● Preparing for recording

Before recording, set the track and recording type:

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② Song	Select the Song Number to be re-recorded.
③ Kbd Track	Select a track.
④ [RESET]	Return to the beginning of the song.
⑤ [REC]	Select the Rec Standby screen.
⑥ Rec Type	Select [Manual Punch I/O].
⑦ Rec Start	Select [Count 2].
⑧ ♩ =	As you listen to the metronome, adjust the tempo (if necessary) for recording.

● Recording

① [PLAY] After the metronome's two measure count-in, song playback begins.

② Press [REC] when you reach the section you wish to re-record. This will select the recording mode that allows you to re-record by playing the keyboard.

③ When you have finished recording, press [REC] again to return to the playback mode.

④ To continue to re-record, repeat steps ② and ③.

⑤ [STOP] Stop the Punch In/Out procedure.

Punch In/Out using a pedal

● Preparing for recording

To control Punch In/Out recording using a pedal, change the function assigned to the pedal. Then follow the above procedure "Preparing for recording" (steps ① to ⑧).

** Before using a pedal switch, make sure it is one that activates only when the pedal is depressed. Be especially careful if you are going to use a pedal switch not made by Roland, since it could be of the type that turns on/off in the reversed order.*

① Connect a pedal to the PEDAL SWITCH jack on the rear of the unit.

② [TUNE/FUNC]	Select the Tune/Function 1 screen.
③ [F2] T/Func 2	Select the Tune/Function 2 screen.
④ Pedal Switch Assign	Select [Punch I/O].

● Recording

① [PLAY] After the metronome's two measure count-in, song playback begins.

② Press the pedal when you reach the section you wish to re-record. This will activate the recording mode that allows you to re-record by playing the keyboard.

③ When you have finished recording, press the pedal again to return to the playback mode.

④ To continue to re-record, repeat steps ② and ③.

⑤ [STOP] Stop the Punch In/Out procedure.

Specifying the Punch In and Punch Out points before recording

● Preparing for recording

Before recording, set the track, recording type and section to be recorded (☞ p. 4-9):

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② Song	Select the Song Number to be re-recorded.
③ Kbd Track	Select a track.
④ [RESET]	Return to the beginning of the song.
⑤ [REC]	Select the Rec Standby screen.
⑥ Rec Type	Select [Auto Punch I/O]. The section to be recorded is shown in the upper right corner of the screen.
⑦ Rec Start	Select [Count 2].
⑧ ♩ =	As you listen to the metronome, adjust the tempo (if necessary) for recording.

● Recording

① [PLAY] After the metronome's two measure count-in, song playback will begin.

② Recording automatically begins when the Punch In point is reached. Re-record the desired section by playing the keyboard. Recording automatically stops (and normal playback continues) when the Punch Out point is reached.

③ [STOP] Stop the Punch In/Out procedure.

Recording a difficult phrase (Loop + Replace Recording)

To record a phrase you find difficult to play well, you can use the Loop function. This function allows you to playback the specified section as many times as you wish and replace it with the new data being played.

● Preparing for recording

Before recording, set the track, Loop section and recording type:

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② Song	Select the Song Number to be re-recorded.
③ Kbd Track	Select a track
④ ( )	Select a Tone.
⑤ [LOOP]	The [LOOP] indicator lights and the Loop section is shown in the upper right corner of the screen.
⑥ Loop *** – ***	Set the first and return-back measure to be recorded.
⑦ [REC]	Select the Rec Standby screen.
⑧ Rec Type	Select [Replace].
⑨ Rec Start	Select [Count 2].
⑩ New Meas Beat	You must set the beat of the measure before starting to record new measures. If you wish to use the beat currently shown in the screen, you need not set it.
⑪ ♩ =	As you listen to the metronome, adjust the tempo (if necessary) for recording.

* *With the above recording method, record only keyboard performance data (Note Events). Recording any other data (such as pitch changes caused by moving the Pitch Bend Lever) may produce undesired results.*

● **Recording**

①[PLAY] After the metronome's two measure count-in, song playback begins from the first measure you have set.

② Playing the keyboard will automatically activate the recording mode. When you reach the return-back measure of the loop, the JW-50 will be changed to the playback mode and repeat playing from the beginning of the loop. This allows you to check the recording you have just made. If you are not satisfied with the result, continue recording until you get it right.

③[STOP] When you have finished, stop recording. The Basic screen in the Sequencer mode will return.

④[LOOP] The [LOOP] indicator goes out.

Recording Volume/Pan set with the Mixer

Using the 8 faders of the JW-50, you can control Volume/Pan (localization of the sound image obtained when using a stereo output). The Volume/Pan settings can be recorded during playback of a song. Also, the settings shown in the screen can be recorded at any location within a song.

Recording volume changes

* *If Volume data has already been recorded, it will be replaced with the new data.*

● **Rehearsal**

①[MIXER] Select the Volume screen.

②[RESET] Return to the beginning of the song.

③[TRACK SEL] Select tracks 1 to 8 or 9 to 16 which contains the track you wish to use for recording.

④[COMPU/MANUAL] Set "Mode" of all the tracks to [M](Manual).

⑤ Lower the fader of the track to be used, and then set it to maximum.

⑥[PLAY] Adjust the volume with the fader as you play back the song.

⑦[STOP] Stop playback.

⑧[RESET] Return to the beginning of the song.

● **Recording**

①[REC] Select the recording stand-by mode.

② Mode Set the "Mode" of the track to be used to [R](Rec).

③ Set the fader of the track to be used for recording to an appropriate position.

④[PLAY] Recording begins immediately.

⑤ Change the volume with the fader as you listen to the song.

⑥[STOP] Stop recording.

● **Monitoring**

①[RESET] Return to the beginning of the song.

②[PLAY] Start playing the recorded data.

③[STOP] Stop playing.

⇨*Volume data can be recorded in the Volume (Numeric) screen in the same way as described above.*

Recording Pan changes

** If Pan data has already been recorded, it will be replaced by the new Pan data.*

① [MIXER] Select the Volume screen.
② [F3] Pan Select the Pan screen.
③ The following procedure is exactly the same as recording Volume changes.

⇨Pan data can be recorded in the Pan (Numeric) screen in the same way as described above.
⇨The Random Pan setting will not be recorded.

Recording Volume/Pan settings at the beginning of a song

** Nothing will be recorded into tracks which do not yet contain performance data.*

● Recording Volume settings

① [MIXER] Select the Volume screen.
② [COMPU/MANUAL] Set "Mode" of all tracks to [M](Manual).
③ Set the volume of each track as follows:
1) [TRACK SEL] Select tracks 1 to 8.
2) Lower all the faders, then set them to maximum.
3) Play back the song from the beginning, then set the volumes of tracks 1 to 8.
4) In the same way, set the volumes of tracks 9 to 16.
④ [RESET] Return to the beginning of the song.
⑤ [F5] All Set Volume settings of all the tracks will be recorded at the beginning of the song.

⇨Volume settings can also be recorded at the beginning of the song in the Volume (Numeric) screen. In this case, the settings of the 8 tracks shown in the screen will be recorded.

● Recording Pan settings

① [MIXER] Select the Volume screen.
② [F3] Pan Select the Pan screen.
③ The following procedure is exactly the same as recording the Volume settings.

⇨Pan settings can also be recorded at the beginning of the song in the Volume (Numeric) screen. In this case, the settings of the 8 tracks shown in the screen will be recorded.
⇨The setting for Random Pan is recorded as an Exclusive Event.

Random Panning

You can create an effect in which pan location changes randomly each time a sound is played.

① [MIXER] Select the Volume screen.
② [F3] Pan Select the Pan screen.
③ Mode Move the cursor to the track where you wish to set Random Pan and select [M](Manual).
④ [F3] Rnd Pan Set Random Pan. (Pressing [F3] again will retrieve the previous mode.)
⑤ To set Random Pan for other tracks, repeat steps ③ and ④.

** The Pan value is not affected by changing the position of the fader.*
** If the Random Pan setting has been recorded into the song, the Random Pan effect will be obtained even if "Manual" has been selected for the Mix Mode.*

Changing the Tempo during the course of a Song (Tempo Recording)

If you wish to change the tempo during the course of a song, you should record changes in the tempo track.

* *If tempo data has already been recorded in the tempo track, it will be replaced by the new data.*

① [SEQUENCER] Select the Basic screen in the Sequencer mode.
② [RESET] Return to the beginning of the song.
③ [F4] Tempo Select the Tempo-Rec Standby screen.
④ ♩ = While listening to the metronome, set the initial tempo of the song.
⑤ [PLAY] The recording starts immediately.
⑥ As you listen to the song, change the tempo.
⑦ [STOP] Stop recording when finished. The unit returns to the Basic screen in the Sequencer mode.

Cancelling Keyboard Aftertouch, Pitch Bend and Modulation in Real-Time recording

① [TUNE/FUNC] Select the Tune/Func 1 screen.
② [F2] T/Func 2 Select the Tune/Func 2 screen.
③ Keyboard Switch Set the Control Function to be cancelled to [Off].
[C.After] : Channel Aftertouch
[P.Bend] : Pitch Bend
[Mod] : Modulation
④ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

* *These settings will be retained even after the unit is switched off. If the recording is finished, set all switches to [On].*

Controlling the Metronome

① [SEQUENCER] Select the Basic screen in the Sequencer mode.
② [F3] Metro Select the Metronome screen.
③ Metronome Mode Determine how the metronome will sound.
[Rec Only] : The metronome sounds only during recording.
[Rec&Play] : The metronome sounds during playback and recording.
[Off] : The metronome does not sound at all.
④ Tone (Volume) Adjust the tone/volume of the metronome.

* *If the volume of track 10 is too low, you may not hear the metronome.*

Transposition

With a transposing instrument (such as a wind instrument), the actual pitch to be played differs from that indicated in printed music (a score). For example, a trumpet generally use B ♭ as its fundamental tone. Therefore, the C major scale of a trumpet corresponds to the B ♭ major scale in actual pitch. That is, all the notes of a trumpet are written higher than the actual sounds.

When you record the performance of such an instrument from a score, you should transpose the pitch using Key Shift in the track parameters. This will simplify playing the part.

① [SEQUENCER] Select the Basic screen in the Sequencer mode.
② [F1] TrckPrm Select the Track Parameter screen.
③ Key Shift Set the amount of transposition (− 24 to +24; in semitone units).
④ [WRITE] The screen responds with "Are you sure ?".
⑤ [F4] YES Write the settings you have made to the song. When the procedure is complete, the screen will read "Completed."
⑥ [EXIT] Return to the Basic screen in the Sequencer mode.

<Major Transposing Instruments and the amount of Transposition>

B ♭ Wind (Trumpet, Clarinet, Soprano Saxophone, Tenor Saxophone)	: − 2
E ♭ Wind (Alto Saxophone, Baritone Saxophone)	: +3
F Wind (French Horn)	: +5

Changing Tones during the course of a Song

Basically, one Tone should be recorded on each track on the JW-50, but it is possible to change Tones during the course of a song.

● Changing Tones during Real-Time recording

① Start recording, and play the keyboard.
② To change Tones, specify a new Tone using the Numeric keys.

● Changing Tones after recording (Microscope)

① [MICRO/STEP] Select the Microscope screen.
② Track Select a track.
③ [F2] Create Select the Create Event screen.
④ Specify the position (measure/beat/clock) where the Tone Change Event should occur.
⑤ [F4] ToneChg A Tone Change Event is created and the Microscope screen is recalled.
⑥ Select the Tone you want.
⑦ [REALTIME] Return to the Basic screen in the Sequencer mode.

<About the Tone Change Event>

To change to a Preset Tone, select "Tone Bank(80 0)," and specify the Tone Number with "Prg=."
To change to a User Tone, select "Tone Bank(81 0)," and specify the Tone Number with "Prg=."

To play a Tone properly, even when the User Tone set in a Song differs from the Internal User Tone set (for a detailed explanation see page 4-37)

You can convert the Tone data contained in a song to Tone data which is compatible with the GS Format. In this way, the Tone will be played properly even if the User Tone set that corresponds to a song differs from the User Tone set in the internal memory.

① [SEQUENCER] Select the Basic screen in the Sequencer mode.
② [F2] SngInfo Select the Song Information screen.
③ Determine if the User Tone set that corresponds to the song has the same name as the User Tone set in the internal memory. If they are different, load the User Tone set of the song into the JW-50. (☞p. 3-36)
④ [SONG EDIT] Select the Song Edit:Menu 1 screen.
⑤ [F5] Menu 2 Select the Song Edit:Menu 2 screen.
⑥ [SHIFT] + [F2] ToneCnv Select the Tone Data Conv screen.
⑦ [F1] Execute The screen responds with "Are you sure ?".
⑧ [F4] YES Convert the data. When conversion is complete, the screen will read "Completed."
⑨ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Voice Reserve Function

When many sounds are recorded in a song, some sounds may be cut (not heard) during playback. This is because the total number of voices being used has exceeded the maximum polyphony (24 voices). When you create a song, try to stay within the 24 voice maximum. However, in the event that more than 24 voices are used at any given point, the Voice Reserve function will see that important parts of your music always have the voices they require:

1) Set the value for Voice Reserve (Voice Number) in unused tracks to [0].
2) Determine which tracks contain the most essential parts of your music (usually rhythm, bass, and melody tracks) and set appropriate Voice Reserve values for those tracks.

⇨*The values set for Voice Reserve for all tracks combined must equal 24 or less.*
⇨*For a detailed explanation about the number of voices used, see "Basic Organization of the JW-50." (☞p. 2-3)*

① [SEQUENCER] Select the Basic screen in the Sequencer mode.
② [F1] TrckPrm Select the Track Parameter screen.
③ Track Select the track where you wish to change the Voice Reserve setting.
④ Voice Rsv Set the number of voices to be reserved.
⑤ [WRITE] The screen responds with "Are you sure ?".
⑥ [F4] YES Write the setting into the song. When the procedure is complete, the screen will read "Completed."
⑦ Edit the Voice Reserve in each track by repeating steps ③ to ⑥.
⑧ [EXIT] Return to the Basic screen in the Sequencer mode.
⑨ Playback the song to confirm that all essential parts have the voices they require.

Saving Song data as Standard MIDI Files

You can convert JW-50 song into Standard MIDI File format (Format 0) as they are saved onto disk.

⇨*For a detailed explanation about Standard MIDI Files, see "Concerning Song Data." (☞p. 2-4)*

① Insert a disk (with the protect tab set to OFF) into the JW-50.

② [DISK]	Select the Disk Menu screen.
③ [F2] Save	Select the Save screen.
④ Type	Select [2 SMF Song Data].
⑤ From Internal Song	Select the song to be saved.
⑥ File Name	Assign a name to the Standard MIDI File (using up to 8 characters). The extension ".MID" will be added after the file name. The extension cannot be changed.
⑦ [F1] Execute	The screen will read "Are you sure ?".
⑧ [F4] YES	Save the song data. When the procedure is complete, the screen will read "Completed."
⑨ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

6. Editing A Song

Copying a phrase from a different track (for a detailed explanation see page 4-24)

① [SONG EDIT] Select the Song Edit:Menu 1 screen.
② [F1] Copy Select the Copy screen.
③ Specify the source track, section to be copied, destination track and the position, how it should be copied and how many times it should be copied.
④ [F1] Execute The window offering selection of MIDI events appears.
⑤ To copy only a specified MIDI Event, select the MIDI Status.
⑥ [F1] Execute The screen responds with "Are you sure ?".
⑦ [F4] YES Copy the data. When the procedure is complete, the screen will read "Completed."
⑧ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Copying a phrase from a different song (for a detailed explanation see page 4-31)

① [SONG EDIT] Select the Song Edit:Menu 1 screen.
② [SHIFT] + [F2] SngCopy Select the Song Copy screen.
③ Specify the source song and track, section to be copied, destination track and the position, how it should be copied and how many times it should be copied.
④ [F1] Execute The screen responds with "Are you sure ?".
⑤ [F4] YES Copy the data. When the procedure is complete, the screen will read "Completed."
⑥ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Erasing a Song (for a detailed explanation see page 4-4)

① [SEQUENCER] Select the Basic screen in the Sequencer mode.
② [F2] SngInfo Select the Song Information screen.
③ Song Specify the Song Number to be erased.
④ [F1] Clear The screen responds with "Are you sure ?".
⑤ [F4] YES Erase the song. When the song is erased, the screen will read "Completed."
⑥ [EXIT] Return to the Basic screen in the Sequencer mode.

Erasing the specified portion of a Song (for a detailed explanation see page 4-27)

① [SONG EDIT] Select the Song Edit:Menu 1 screen.
② [F2] Erase Select the Erase screen.
③ Song Specify the track and section to be erased.
④ To erase only a specified MIDI Event, select the MIDI Status.
⑤ [F1] Execute The screen responds with "Are you sure ?".
⑥ [F4] YES Erase the specified section of the song. When it is erased, the screen will read "Completed."
⑦ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

<EX : To erase all the Volume data (Volume Events) recorded in Mixer Recording>
Specify the section to be erased in step ③ as the entire song, then select [Volume] in step ④.

Deleting Measures (for a detailed explanation see page 4-30)

① [SONG EDIT] Select the Song Edit:Menu 1 screen.
② [SHIFT] + [F1] Delete Select the Delete Measure screen.
③ Specify the section to be deleted.
④ [F1] Execute The screen responds with "Are you sure ?".
⑤ [F4] YES Delete the data you have specified. When it is deleted, the screen will read "Completed."
⑥ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Inserting Empty Measures (for a detailed explanation see page 4-29)

① [SONG EDIT] Select the Song Edit:Menu 1 screen.
② [F4] Insert Select the Insert Measure screen.
③ Specify the position and the number of measures to be inserted, and the beat of the empty measures.
④ [F1] Execute The screen responds with "Are you sure ?".
⑤ [F4] YES Insert the data you have specified. When it is inserted, the screen will read "Completed."
⑥ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Shifting Performance Data (for a detailed explanation see page 4-28)

① [SONG EDIT] Select the Song Edit:Menu 1 screen.
② [F3] Move Select the Move screen.
③ Specify the source track and the section to be shifted, as well as the destination track and the position for the data to be entered.
④ To move only a specified MIDI Event, select the MIDI Status.
⑤ [F1] Execute The screen responds with "Are you sure ?".
⑥ [F4] YES Move the data you have specified. When finished, the screen will read "Completed."
⑦ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Transposing (for a detailed explanation see page 4-33)

① [SONG EDIT] Select the Song Edit:Menu 1 screen.
② [F5] Menu 2 Select the Song Edit:Menu 2 screen.
③ [F2] Trnspse Select the Transpose screen.
④ Specify the track to be transposed, the section to be transposed, the amount of transposition (in semitone units) and the note range to be transposed.
⑤ [F1] Execute The screen responds with "Are you sure ?".
⑥ [F4] YES Transpose the data as specified. When finished, the screen will read "Completed."
⑦ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Replacing a Percussion Instrument (for a detailed explanation see page 4-33)

Using the Transpose function, you can replace percussion sounds in the song:
① [SONG EDIT] Select the Song Edit:Menu 1 screen.
② [F5] Menu 2 Select the Song Edit:Menu 2 screen.
③ [F2] Trnspse Select the Transpose screen.

④ Specify the following:

Track to be transposed	Drum track
Section to be transposed	From the beginning to the end of the song
Amount of transposition	For example, to replace Snare Drum 1 [D2(38)] with Snare Drum 2 [E2(40)], set it to [+2] as the Note Number is increased by two.
Range of notes to be transposed	Since only one sound is to be changed, set both instruments to the Note Number of the instrument to be replaced. For instance, to replace Snare Drum 1 [D2(38)] with a different drum sound, set to [D2(38) < – > D2(38)].
⑤ F1 Execute	The screen responds with "Are you sure ?".
⑥ F4 YES	Transpose the data as specified. When the exchange is finished, the screen will read "Completed."
⑦ SEQUENCER	Return to the Basic screen in the Sequencer mode.

Quantizing a Song (for a detailed explanation see page 4-32, 23 (Quick Start))

Using the Quantize function, you can correct the timing inaccuracies that may have occurred during Real-Time recording. This function can be effectively used for instruments (such as drums and bass) which require precise rhythmic timing. You can use any of the following resolutions:

[1/32]	Thirty-second Notes	[1/8]	Eighth Notes
[1/24]	Sixteenth Note Triplets	[1/6]	Quarter Note Triplets
[1/16]	Sixteenth Notes	[1/4]	Quarter Notes
[1/12]	Eighth Note Triplets	[1/2]	Half Notes

[Shuffle 16]	Shuffle 16
[Shuffle 8]	Shuffle 8

* [Shuffle 8] and [Shuffle 16] cannot be selected for Real-Time recording.

● Quantization: Real-Time Recording

① SEQUENCER	Select the Basic screen in the Sequencer mode.
② REC	Select the Rec Standby screen.
③ Qnt	Set the quantization resolution (refer to the table above).

⇨*Even during recording, the resolution can be changed.*

● Quantization after Recording (Song Edit Mode)

* *Quantization will only correct the timing of keyboard performance data (Note Events). For this reason, you should avoid quantizing data which contains other MIDI Events, since this could produce undesired results.*

① SONG EDIT	Select the Song Edit:Menu 1 screen.
② F5 Menu 2	Select the Song Edit:Menu 2 screen.
③ F1 Quantize	Select the Quantize screen.

④ Specify the track and the section to be quantized, and then the following:

Type	Select the quantization resolution (refer to the table above).
Rate	[100%]
Offset	[0]
Note Range	[C-1(0) < – > G9(127)]

⑤ [F1] Execute	The screen responds with "Are you sure ?".
⑥ [F4] YES	Quantize the data as specified. When finished, the screen will read "Completed."
⑦ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

Creating Rhythmic Feels

Using the Quantize function in the Song Edit mode (refer to the previous page), you can create specific rhythmic 'feels.' Set the Offset value slightly lower than zero (−), for a feel which anticipates the beat. Set it slightly higher than zero (+), to create a feel which is 'behind the beat.'

Creating a Shuffle Beat

You can also create shuffle beats using the Quantize function (refer to the previous page). Set the Type to [Shuffle 8] (8 beat shuffle) or [Shuffle 16] (16 beat shuffle).

Creating Legato or Staccato effects (for a detailed explanation see page 4-36)

① [SONG EDIT]	Select the Song Edit:Menu 1 screen.
② [F5] Menu 2	Select the Song Edit:Menu 2 screen.
③ [SHIFT] + [F1] ChgGate	Select the Change Gate Time screen.
④ Specify the track and the section to be edited, and then the following:	
Change to	To create a legato (smoothly played) effect, set the gate higher than 101%. To create a Staccato (detached) effect, set it lower than 99%.
Bias	[0]
Note Range	[C-1(0) < − > G9(127)]
⑤ [F1] Execute	The screen responds with "Are you sure ?."
⑥ [F4] YES	Edit the data as specified. When finished, the screen will read "Completed."
⑦ [SEQUENCER]	Select the Basic screen in the Sequencer mode.

To change the overall Velocity (playing strength) (for a detailed explanation see page 4-35)

① [SONG EDIT]	Select the Song Edit:Menu 1 screen.
② [F5] Menu 2	Select the Song Edit:Menu 2 screen.
③ [F4] ChgVelo	Select the Change Velocity screen.
④ Specify the track and the section to be edited, and then the following:	
Change to	[100%]
Bias	To increase the velocity, set to a positive value.
Note Range	[C-1(0) < − > G9(127)]
⑤ [F1] Execute	The screen responds with "Are you sure ?".
⑥ [F4] YES	Edit the data as specified. When finished, the screen will read "Completed."
⑦ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

Setting a consistent Velocity (for a detailed explanation see page 4-35)

① [SONG EDIT] Select the Song Edit:Menu 1 screen.
② [F5] Menu 2 Select the Song Edit:Menu 2 screen.
③ [F4] ChgVelo Select the Change Velocity screen.
④ Specify the track and the section to be edited, and then the following:
Change to [0%] (When the Bias is [0], the Velocity values will all be changed to 64.)
Bias Set the Velocity value.
For example, set this to [36] to obtain Velocity value 100.
Note Range [C-1(0) < – > G9(127)]
⑤ [F1] Execute The screen responds with "Are you sure ?".
⑥ [F4] YES Edit the data as specified. When finished, the screen will read "Completed."
⑦ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Data Thinning (For a detailed explanation see page 4-34)

A number of types of data that are recorded when using the Mixer are of the continuously changing type, such as Volume/Pan, as well as Aftertouch and Pitch Bend. For this reason, a surprisingly large amount of unnecessary data can accumulate.
The Data Thinning feature allows you to thin out a considerable portion of such unneeded data, without affecting the overall quality of the music as perceived by the listener.

① [SONG EDIT] Select the Song Edit:Menu 1 screen.
② [F5] Menu 2 Select the Song Edit:Menu 2 screen.
③ [F3] Thin Select the Data Thin screen.
④ Specify the track and the section to be thinned, and then the following:
Status Select the MIDI Events to be thinned.
Value Specify the interval for thinning the value.
Time Specify the interval for thinning the time.
⑤ [F1] Execute The screen responds with "Are you sure ?".
⑥ [F4] YES Thin out the data as specified. When complete, the screen will read "Completed."
⑦ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Editing MIDI Events (Microscope Editing)

① [SEQUENCER] Select the Basic screen in the Sequencer mode.
② [MICRO/STEP] Select the Microscope screen.
③ Track Select a track.

● Changing the value of a MIDI Event

① Position the cursor on the MIDI Event to be edited.
First, place the cursor on the measure number (□ / /) and specify the measure number with the Numeric Keys. Then move the cursor to the MIDI Event to be edited.
② Change the value of the MIDI Event.

● Erasing a MIDI Event

① Position the cursor on the MIDI Event to be erased.

② [F1] Erase — Select the Erase Event screen.

③ [F4] YES — Delete the MIDI Event.

● Creating a MIDI Event (except Tempo track)

① [F2] Create — Select the Create Event screen.

② Position — Specify the position (Measure/Beat/Clock) for the new MIDI Event.

③ Specify the MIDI Event to be created with the Function Keys.

The MIDI Event is created and the Microscope screen will appear.

[F1] Note	Note Event is created.
[F2] P.Bend	Pitch Bend Event is created.
[F3] C.After	Channel Aftertouch Event is created.
[F4] ToneChg	Tone Change Event is created.
[F5] C.Chg	Control Change Event is created.
[SHIFT] + [F1] NRPN	NRPN (Non Registered Parameter Number) is created.
[SHIFT] + [F2] RPN	RPN (Registered Parameter Number) is created.
[SHIFT] + [F3] P.After	Polyphonic Aftertouch Event is created.
[SHIFT] + [F4] GS-Ex	GS Exclusive Event is created.
[SHIFT] + [F5] Excl	Exclusive Event is created.

④ Set the values for the created Events.

● Shifting a MIDI Event

① Move the cursor to the MIDI Event to be shifted.

② [F3] Move — Select the Move Event screen.

③ Position — Specify the destination position for the Event in the measure/beat/clock display.

④ [F4] YES — The MIDI Event is shifted to its new place.

7. Creating A Tone

About User Tones

A Tone consists of a Source Tone (GS Tone) and eight parameter settings. The Tones you create can be written into User Tone positions for future use. A disk can store one User Tone set that contains 128 different User Tones.

Making a Tone

① [TONE] Select the Tone screen.
② Track Select a track other than the Drum track.
③ If you wish to edit an existing Tone, select it.
If you wish to make a Tone from scratch, select an unused User Tone position (number).
④ [F1] Edit Select the Tone Edit screen.
⑤ While listening to the sound, edit the Tone settings.

* *Some GS Tones may not change significantly when changing the parameter values.*

<Selecting a Source Tone>

Source Tone — Select a Source Tone (GS Tone). The GS Tones are stored with Tone Numbers (1 to 128) and Variation Numbers (0 to 127).

<Editing the Vibrato>

Vib Rate — Positive (+) values increase the speed of the pitch fluctuations.
Vib Depth — Positive (+) values deepen the pitch fluctuations.
Vib Delay — Positive (+) values increase the time from the moment the key is pressed until the vibrato effect begins working.

<Making the sound softer>

Cutoff Freq — Negative (−) values will create softer sounds.

<Making the sound more unusual>

Resonance — Positive (+) values will make the sound more unusual.

<Adjusting the Attack or Release Time of the sound>

Attack Time — Positive (+) values increase the attack time (the length of time it takes for the sound to begin).
Decay Time — Positive (+) values increase the time it takes a sound to decay (to a preset level) after it reaches its maximum volume level.
Release Time — Positive (+) values increase the time required for the sound to fade away completely.

⑥ If you wish to save a Tone you have created, perform the write procedure (described on the following page).
If not, press [EXIT] and select a different Tone. The Tone you created will be erased.

Writing a Tone you have created

① [WRITE]	Select the Write:Tone screen.
② Tone Number	Select the destination User Tone Number.
③ Assign a name to the Tone (using up to 12 characters).	
④ [F1] Execute	The screen responds with "Are you sure ?".
⑤ [F4] YES	Write the Tone into memory. When the procedure is finished, the screen will read "Completed."

Saving a User Tone Set onto a Disk

User Tone Set (U1 to U128) can be saved onto a disk. Use a disk formatted for the JW-50 (☞ p. 3-46, p. 4-52).

① Insert a formatted disk (with the protect tab set to OFF) into the JW-50.

② [DISK]	Select the Disk Menu screen.
③ [F2] Save	Select the Save screen.
④ Type	Select [3 User Tone Set].
⑤ [<]	Name the User Tone set (using up to 8 characters).
⑥ [F1] Execute	The screen responds with "Are you sure ?".
⑦ [F4] YES	Save the User Tone set. When the procedure is finished, the screen will read "Completed."
⑧ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

Loading the User Tone Set from a Disk

① Insert the disk into the JW-50.

② [DISK]	Select the Disk Menu screen.
③ [F1] Load	Select the Load screen.
④ Type	Select [3 User Tone Set].
⑤ From Disk	Select the User Tone set you wish to load.
⑥ [F1] Execute	The screen responds with "Are you sure ?".
⑦ [F4] YES	Load the User Tone set. When the procedure is finished, the screen will read "Completed."
⑧ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

8. Monitoring

Checking the Amount of Song Data in Internal Memory

① [INFORMATION] Select the Information screen.
The amount of data in each song is shown in the screen.
② [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Checking the Available Memory

① [INFORMATION] Select the Information screen.
Internal The screen shows how much memory is available.
② [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Checking the User Tone Set currently in Memory

① [TONE] Select the Tone screen.
② [ ] at the upper right The User Tone set currently in memory will be displayed.
③ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Alternatively:
① [SEQUENCER] Select the Basic screen in the Sequencer mode.
② [F2] SngInfo Select the Song Information screen.
③ [ ] at the upper right The User Tone set currently in memory will be displayed.
④ [EXIT] Return to the Basic screen in the Sequence mode.

Determining if the User Tone set in memory is the same as the User Tone set for the currently selected song

① [SEQUENCER] Select the Basic screen in the Sequencer mode.
② [F2] SngInfo Select the Song Information screen.
[ ] at the upper right The name of the User Tone set in memory will be displayed.
Saved User Tone Set [ ] The name of the User Tone set that corresponds to the currently selected song will be displayed.
③ To check the name of a different song, change the Song Number.
④ [EXIT] Return to the Basic screen in the Sequencer mode.

Determining if tracks contain Performance Data

① [SEQUENCER] Select the Basic screen in the Sequencer mode.
② State No performance data exists in a track shown as [–].

Determining if a specified MIDI Event exits

① [MICRO/STEP]	Select the Microscope screen.
② Track	Select a track.
③ [F4] View	Select the View Select screen.
④ Specify the type of MIDI Event you wish to check.	
⑤ [EXIT]	Return to the Microscope screen. If the specified MIDI Event exists, it will be indicated. If not, nothing will appear in the screen.
⑥ [REALTIME]	Return to the Basic screen in the Sequencer mode.

Checking the Volume value written into a Song

① [MIXER]	Select the Volume screen.
② [F2] Vol Num	Select the Volume (Numeric) screen.
③ [COMPU/MANUAL]	Set "Mode" of all tracks to [C] (Compu).
④ [SHIFT] + [STOP]	Perform an update. When the update is complete, the current Volume value will be shown in the screen.
⑤ [TRACK SEL]	Select the tracks (1 – 8 / 9 – 16) you wish to monitor.
⑥ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

Checking the Pan value written into a Song

① [MIXER]	Select the Volume screen.
② [F4] Pan Num	Select the Pan (Numeric) screen.
③ [COMPU/MANUAL]	Set "Mode" of all tracks to [C] (Compu).
④ [SHIFT] + [STOP]	Perform an update. When the update is complete, the current Pan value will be shown in the screen.
⑤ [TRACK SEL]	Select the tracks (1 – 8 / 9 – 16) you wish to monitor.
⑥ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

Monitoring the current Tempo

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② ♩ =	The current tempo is indicated.

⇨*The tempo can also be monitored in the Mixer screen.*

Monitoring the current Beat

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② ( ) under "M="	The current Beat is indicated.

Checking the Transmit Channel of each Track

① [SEQUENCER] Select the Basic screen in the Sequencer mode.
② [F1] TrckPrm Select the Track Parameter screen.
③ Tx Channel The transmit channel of the selected track is indicated.
④ To check the transmit channel of other tracks, move the cursor to "Track" and change the number.
⑤ [EXIT] Return to the Basic screen in the Sequencer mode.

** When the Output Assign is set to [Int], no MIDI messages will be transmitted.*

Checking the Amount of Data used by each Song stored on a Disk

① Insert the disk into the JW-50.
② [DISK] Select the Disk Menu screen.
③ [F1] Load Select the Load screen.
④ Type Select [1 JW-50 Song Data].
⑤ From Disk The amount of song data is shown to the right of the Song Name.
⑥ To check the amount of data used by other songs, move the cursor to [<], then select the song.
⑦ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Checking the Storage space remaining on Disk

① Insert the disk into the JW-50.
② [DISK] Select the Disk Menu screen.
③ [F2] Save Select the Save screen.
④ To Disk (*** Songs Exist, *** KB Free)
The storage space remaining on Disk is indicated.
⑤ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Checking the User Tone Set stored on a Disk

① Insert the disk into the JW-50.
② [DISK] Select the Disk Menu screen.
③ [F1] Load Select the Load screen.
④ Type Select [3 User Tone Set].
⑤ From Disk The name of the User Tone set is shown.
⑥ To check the name of another User Tone set, move the cursor to [<], then select the set.
⑦ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

9. Using An External MIDI Device

⇨Before using any external MIDI device with the JW-50, please refer to "Handling of MIDI messages." (☞p. 2-9)

Playing the JW-50's Internal Sound Source from an External Keyboard

● Setup and Preparation

a) Connect the MIDI OUT connector on the external keyboard to the MIDI IN connector on the JW-50. Be sure to use a proper MIDI cable.

b) The MIDI receive channel of each track is the same as its Track Number. Set the MIDI transmit channel on the external keyboard to match the receive channel (Track Number) of the track you wish to play.

<Message Reception>

The JW-50 allows you to ignore specific MIDI messages. If there are any functions that you do not wish to be controlled by the external keyboard, turn off the reception of the MIDI messages that control those functions.

① [MIDI] Select the MIDI:Rx Switch screen.

② Set the MIDI messages you wish to ignore to [Off].

Aftertouch (Channel Aftertouch and Polyphonic Aftertouch messages)
Pitch Bend (Pitch Bend messages)
Modulation (Modulation messages)
Tone Change (Tone Selection messages)
Exclusive (Exclusive messages)

③ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

● Tone Selection

How the Tones are selected on the JW-50 depends on whether the external keyboard transmits a Bank Select message together with a Tone Change message.

<The external keyboard that can transmit Bank Select Messages>

Bank Select messages select a Tone Group as shown in the following table, and Program Change messages select a Tone Number in the selected Bank. To change a Tone, first transmit the Bank Select message, then the Program Change message.

Bank Number (MSB)	Selected Tone Group
1 to 63, 127	GS Tones
80	Preset Tones
81	User Tones

*Set the LSB of the Bank Number to "0." Even if it is set to any other number, it will be recognized as zero.

A keyboard that can control a GS Format sound module, such as the JV-30 (16 Part Multi Timbral Synthesizer), can control the JW-50 as a GS Format sound module. It cannot, however, select Preset Tones or User Tones.

⇨For a detailed explanation about the GS Format, refer to "About The GS Format." (☞p. 2-11)
⇨To handle the JW-50 as a GS Format sound module, set it to the basic settings of the GS Format. (☞p. 3-45)

<The external keyboard that cannot transmit Bank Select messages>

By playing the keyboard, you can select a Tone of the Program Number that corresponds to the sound played on the keyboard. However, it is not possible to change a Preset Tone to a User Tone (or vice versa) from the keyboard. If you wish to do so, use the panel switches on the JW-50.

Playing an External Sound Module from the JW-50's Keyboard

● Setup and preparation

a) Connect the MIDI OUT connector on the JW-50 to the MIDI IN connector on the external sound module.

b) A keyboard performance is transmitted on the transmit channel of the track currently selected. That is, you can change transmit channels by changing tracks. Transmit channels have been pre-programmed to match the Track Numbers. Select the track that corresponds to the receive channel on the external sound module. The transmit channel of each track can be changed if desired.

c) If you only wish to play an external sound module by playing the JW-50's keyboard, set the Output Assign to [Ext].

<Transmit Channel and Output Assign Settings>

① [SEQUENCER]	Select the Basic screen in the Sequencer mode.
② [F1] TrckPrm	Select the Track Parameter screen.
③ Track	Select a track.
④ Output Assign	If you wish to play only the external sound module (to mute the internal sound module), select [Ext].
⑤ Tx Channel	Set the transmit channel.
⑥ [EXIT]	Return to the Basic screen in the Sequence mode.

● Tone Selection

How the Tones on an external sound module are selected depends on whether the external sound module can recognize Bank Select messages or not.

< When the external sound module can recognize Bank Select messages>

On a device featuring GS Bank Numbers that correspond to the Preset Tones/User Tones on the JW-50, such as the JV-80 (Multi Timbral Synthesizer), Tones will change accordingly to the Tone changes on the JW-50's keyboard.

On a device that does not feature GS Bank Numbers that correspond to the Preset Tones/User Tones on the JW-50, such as the SC-55/SC-155 Sound Canvas (MIDI Sound Generators), a number that contains no sound will be selected if you change Tones on the JW-50's keyboard. If, however, you do not need to change sounds with the JW-50's Tone change messages, you can play the sound currently selected on the sound module by setting the Instrument Receive Switch (or Tone Receive Switch) to Off.

* *Some devices do not have an Instrument Receive Switch (or Tone Receive Switch).*

<When the external sound module cannot recognize Bank Select messages>

On such an instrument, change of Tones on the JW-50 will select the Tone of the Program Number that corresponds to the Tone on the JW-50. However, even when you change a Preset Tone to a User Tone (or a User Tone to a Preset Tone), there is no change of Tones on the external sound module.

Creating a Song using an External Sound Module

a) Connect the MIDI OUT connector on the JW-50 to the MIDI IN connector on the external MIDI device. Be sure to use a proper MIDI cable.

b) A keyboard performance will be transmitted on the transmit channel of the track currently selected. Transmit channels have been pre-programmed to match the Track Numbers. (The transmit channel of each track can be freely changed). Set the transmit channel of the track to be recorded to match the receive channel of the external sound module.

c) Set the Output Assign to [Ext] so that the internal sound module will not sound when playing the JW-50's keyboard.

d) Check how the sounds on the external sound module will change according to the Tone changes on the JW-50. (Refer to the previous page.)

e) When the recording starts on the JW-50, the Tone currently selected will be automatically recorded into the song. Before recording, select a Tone of the JW-50 to specify the sound to be played on the external sound module.

f) Start recording. The recording procedure is the same as when using the internal sound module.

<Setting the Transmit Channel and Output Assign>

① [SEQUENCER]	Select the basic screen in the Sequencer mode.
② [F1] TrckPrm	Select the Track Parameter screen.
③ Track	Select a track.
④ Output Assign	Select [Ext].
⑤ Tx Channel	Set the transmit channel.
⑥ [EXIT]	Return to the Basic screen in the Sequencer mode.

Synchronization with an external MIDI device

You can synchronize the song of an external sequencer to the song of the JW-50 via MIDI. Generally, the device that controls the synchronization is called the 'Master' and the one controlled is called the 'Slave.'

Using the JW-50 as a Master device

Connect the MIDI OUT connector on the JW-50 to the MIDI IN connector on the external sequencer. Be sure to use a proper MIDI cable.

● Setting the JW-50

① [MIDI]	Select the MIDI:Rx Switch screen.
② [F2] System	Select the MIDI:System screen.
③ Sync Clock	Be sure it is set to [Int].
④ Sync Out	Set it to [On].
⑤ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

● Setting the external sequencer

Set the external sequencer to be controlled by an external device.

● Synchronizing

① JW-50	: Select the song to be played.
② External Sequencer	: Select the song to be played.

** If the external sequencer can receive Song Select messages, selecting a song on the JW-50's sequencer will select the same Song Number of the external sequencer. To re-select a song on the external sequencer, first select a song on the JW-50's sequencer then on the external sequencer.*

③ JW-50 : Press [RESET] to return to the beginning of the song.
④ External sequencer : Return to the beginning of the song.

** When the external sequencer can receive Song Position Pointer messages, pressing [RESET] on the JW-50 will automatically reset the sequencer to the beginning of the song.*

⑤ JW-50 : Press [PLAY] to start playback. The song on the external sequencer will simultaneously start playing, synchronizing to the JW-50. When the JW-50 finishes playing the song, the external sequencer will automatically stop.

Using the external sequencer as a Master device

Connect the MIDI OUT connector on the sequencer to the MIDI IN connector on the JW-50. Be sure to use a proper MIDI cable.

● Setting the external sequencer

Set the external sequencer to transmit MIDI clock data (the unit's internal clock will be on).

● Setting the JW-50

① [MIDI] Select the MIDI:Rx Switch screen.
② [F2] System Select the MIDI:System screen.
③ Sync Clock Be sure it is set to [Slave].
④ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

** When the Sync Clock is set to [Slave], the internal sequencer will not start until it receives MIDI clock data from an external device. Be sure to return the Sync Clock to [Int] when you are finished.*

● Synchronizing

① External Sequencer : Select a song to be played.
② JW-50 : Select a song to be played.

** If the external sequencer can transmit Song Select messages, selecting a song on the external sequencer will select the same Song Number of the JW-50. (Any Song Number higher than 9, however, will be ignored.) To re-select a song on the JW-50, first select a song on the external sequencer then on the JW-50.*

③ External sequencer : Return to the beginning of the song.
④ JW-50 : Press [RESET] to return to the beginning of the song.

** When the external sequencer can transmit Song Position Pointer messages, returning to the beginning of the song on the sequencer will automatically reset the song on the JW-50 to the beginning.*

⑤ External Sequencer : Start playback of the song. The song on the JW-50 will simultaneously start playing, synchronizing to the sequencer. When the external sequencer finishes playing the song, the JW-50 will automatically stop.

Controlling Start/Stop from the External MIDI Device

You can start or stop a song on the JW-50 with a MIDI device that can transmit Start/Stop messages.

① Connect the MIDI OUT connector on the sequencer to the MIDI IN connector on the JW-50. Be sure to use a proper MIDI cable.

② [MIDI] Select the MIDI:Rx Switch screen.

③ [F2] System Select the MIDI:System screen.

④ Sync Clock Set it to [Remote].

⑤ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

The necessary settings have now been completed. Starting/stopping the song on the external MIDI device will simultaneously start/stop the song on the JW-50.

Recording a Song from an External Sequencer into the JW-50 (Multi Recording)

The JW-50 can record the song currently being played on an external sequencer. To record data by synchronizing the JW-50 to the external sequencer, the tempo data of the song can also be recorded:

① Connect the MIDI OUT connector on the external sequencer to the MIDI IN connector on the JW-50. Be sure to use a proper MIDI cable.

② Set the external sequencer to transmit MIDI clock data (the unit's internal clock will be on).

③ External Sequencer : Select the song to be recorded into the JW-50.

④ JW-50 : Press [MIDI] to select the MIDI:Rx Switch screen.

⑤ JW-50 : Press [F2] System to select the MIDI:System screen.

⑥ JW-50 : Set the Sync Clock to [Slave].

* *When the Sync Clock is set to [Slave], the internal sequencer will not start until it receives MIDI clock data from an external device. Be sure to return the Sync Clock to [Int] when you are finished.*

⑦ JW-50 : Press [SEQUENCER] to select the Basic screen in the Sequencer mode.

⑧ JW-50 : Select a song number which contains no song data.

⑨ External Sequencer : Return to the beginning of the song.

⑩ JW-50 : Press [REC] while holding [SHIFT] down to select the Multi-Rec Standby screen.

⑪ JW-50 : Set the New Meas Beat to the same beat as that of the song to be recorded.

⑫ External Sequencer : Start playback of the song on the external sequencer. The JW-50 will automatically record the song from the external sequencer. If you stop the external sequencer, the JW-50 will stop recording simultaneously.

10. Other Useful Functions

Initialization

All the data on the JW-50 can be initialized (returned to the pre-programmed factory settings). If you wish to save the current settings, store them on a disk.

① [TUNE/FUNC] Select the Tune/Function 1 screen.
② [F5] Factory The screen responds with "Are you sure ?".
③ [F4] YES Execute initialization.

Retrieving the Basic Settings of the JW-50

The sound source of the JW-50 can be returned to the basic settings after, for example, it has been used in the GS Format.

① [TUNE/FUNC] Select the Tune/Function 1 screen.
② [F4] JWReset The screen responds with "Are you sure ?".
③ [F4] YES Execute the JW-50 Reset. When finished, the screen will read "Completed."
④ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Retrieving the Basic Settings of the GS Format

The JW-50's internal sound source can be used as a GS Format sound source:

① [TUNE/FUNC] Select the Tune/Function 1 screen.
② [F3] GSReset The screen responds with "Are you sure ?".
③ [F4] YES Execute the GS Reset. When finished, the screen will read "Completed."
④ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Deleting a Song on a Disk

① Insert the disk (with the protect tab set to Off) into the JW-50.
② [DISK] Select the Disk Menu screen.
③ [F3] Delete Select the Delete screen.
④ Type Be sure that [1 JW-50 Song Data] is selected.
⑤ [<] Select the song to be deleted.
⑥ [F1] Execute The screen responds with "Are you sure ?".
⑦ [F4] YES Delete the song you have selected. When it has been deleted, the screen will read "Completed."
⑧ [SEQUENCER] Return to the Basic screen in the Sequencer mode.

Formatting a Disk

A brand new disk (or a disk that has been used by another device) must be formatted for use on the JW-50. When you format a disk, you can also assign a label (name) to it.

* *Use 3.5 inch micro floppy disks (2DD). Other disks cannot be used.*
* *Formatting a disk will erase any data stored on it.*

① Insert the disk (with the protect tab set to Off) into the JW-50.

② [DISK]	Select the Disk Menu screen.
③ [F4] Format	Select the Format screen.
④ Label	Create a disk label (using up to 11 characters).
⑤ [F1] Execute	The screen responds with "Are you sure ?".
⑥ [F4] YES	Format the disk. When the process is finished, the screen will read "Completed."
⑦ [SEQUENCER]	Return to the Basic screen in the Sequencer mode.

CHAPTER

4

SCREENS AND AVAILABLE FUNCTIONS

1. SEQUENCER (Play/Real-Time Recording)••••4-1

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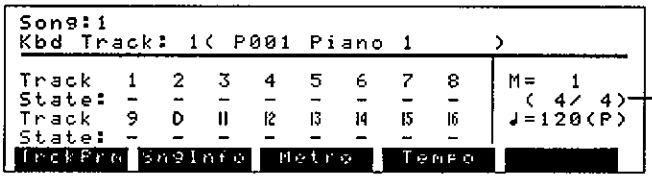
1. SEQUENCER (Play/Real-Time Rec)

Provides for the playback of songs, and carries out Real-Time recording.

[The sequencer's Basic screen]·····

Whenever the power is turned on, or when you press [SEQUENCER], the sequencer's Basic screen is selected.


Song:1
Kbd Track: 1(P001 Piano 1)
Track 1 2 3 4 5 6 7 8
State: - - - - - - - -
Track 9 10 11 12 13 14 15 16
State: - - - - - - - -
M= 1
(4/ 4)
♩=120(P)
TrkPrm
SngInfo
Metro
Tempo
Beat of current measure

⇨Press [F4] Tempo to record the tempo.

Song (select song) : [1] to [8]

Allows for the selection of a song. If the song has a name, it will be displayed to the right of the song number.

Kbd Track (selection of a track) : [1] to [16]

Provides for the selection of the track played by the keyboard (or the track to be recorded).

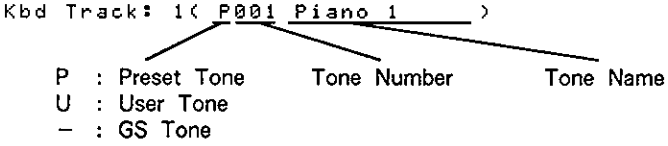
(Tone) : [P1] to [P128], [U1] to [U128]
(Drum set) : [D1], [D9], [D17], [D25], [D26], [D33], [D41], [D49], [D57], [D128]

This is the Tone (or Drum set) selected for the specified track. You can also change to another Tone (or Drum set).

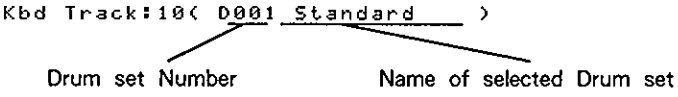
⇨Track 16 can also be used as a Drum track. (☞p. 4-2)

*You cannot select D57 (SFX set) or D128 (CM-64/32L set) for track 10. When you wish to use one of these Drum sets, you must first change track 16 to a Drum track, then select the desired set.

Standard track:



Drum track:



State

Displays the current state of tracks 1 through 16:

- [P] : Contains recorded performance data which can be played back.
- [M] : Recorded performance data will not be heard because the track is muted.
- [–] : Contains no performance data.
- [R] : In record standby, or currently being recorded.

⇨To mute a specific track, move the cursor to that track and change [P] to [M].

M = (measure) : [1] to [999]

Displays the current song position (measure number). If playback is stopped in the middle of a measure, a "+" is displayed to the right of the measure number.

♩ = (tempo) : [20] to [240]

Sets the tempo used during recording /playback of a song.

(State of the tempo track)

The following indicate the state of the tempo track:

[P] : Tempo data which can be revised (changed).

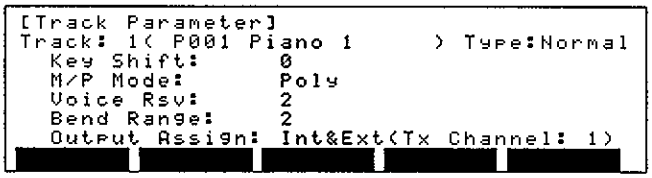
[M] : Tempo data cannot be changed because the track is muted.

[R] : In record standby, or recording is in progress.

⇨To mute the tempo track, move the cursor to the [P] and change it to [M].

F1 TrckPrm (Track Parameter) ·····

This screen provides settings which determine the manner in which sound is to be produced, and how MIDI output takes place. These settings are made on an individual basis for tracks 1 to 16. Make the settings best suited to your requirements.



*Any setting changes that you make for Type, Key Shift, M/P Mode, and Voice Rsv are only temporary. These settings will revert to their former values if you switch to a different song, etc. To keep whatever setting changes have been made, and have them included as part of the song, you must perform the write procedure with respect to each track. (Refer to the next page.)

Track (selection of a track) : [1] to [16]

Select the track for which settings are to be edited.

Tone : [P001] to [P128], [U001] to [U128]
Drum set : [D1], [D9], [D17], [D25], [D26], [D33], [D41], [D49], [D57], [D128]

This is the Tone (or Drum set) selected for the specified track. Another Tone (or Drum set) can be selected any time you wish.

Type (track type) : [Normal] or [Drum]

When track 16 is selected, its type can also be altered.

[Normal] : a standard track

[Drum] : Drum track

⇨When track 16 has been converted into a Drum track, the track indicator will read "D" in sequencer's Basic screen.

Key Shift : [−24] to [0] to [+24] (semitone units, ± 2 octaves)

Allows the Tone's pitch to be shifted in semitone units. The setting can be altered when you wish to change the pitch of a specific track.

M/P Mode

Selects the manner in which sound is produced.

Poly : Allows several sounds to be produced together. Normally the unit is set to the Poly mode.

Mono : Allows only one sound to be produced at a time. This setting is convenient to use with Tones duplicating instruments which normally only produce one note at a time (brass instruments, for example). It is also effective when performing solos using Synth Lead or similar sounds.

Voice Rsv (Voice Reserve) : [0] to [24]

Voice Reserve is a setting for assigning a number of voices that will always be reserved and be made available for certain tracks. This setting becomes important when the total number of voices being sounded may exceed the limit for maximum polyphony (24). When making the setting, you must take into account the number of voices required by individual tracks, as well as the number of voices that make up, and thus are required by, any particular Tone.

Note that the values set for Voice Reserve for all tracks combined must equal 24 or less.

*When you cannot reserve all the voices you need, you will have to reduce the number of voices being used by other tracks.

Bend Range : [0] to [24] (semitone units, 2 octaves)

Sets the maximum amount of change that can be obtained when the Pitch Bend Lever is used to alter the pitch.

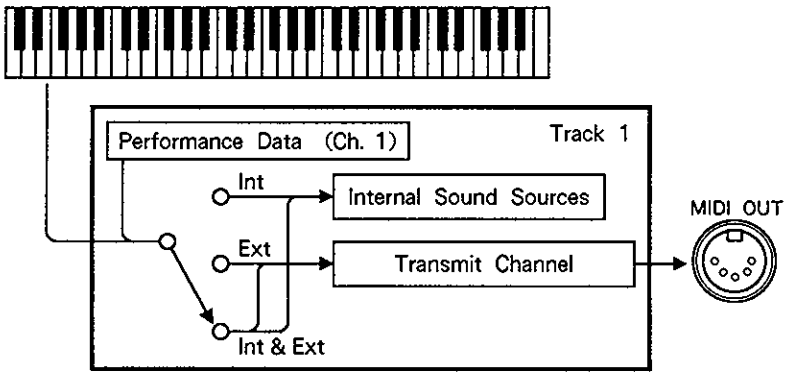
*Since the setting for Bend Range is recorded into a track, whenever the Pitch Bend Lever is used to alter the pitch, the changes are not stored as track parameters in the song.

Output Assign : [Int & Ext], [Int], [Ext]

This setting allows you to choose whether song data (and what is played on the keyboard) will play using the internal sound sources, or will be output as MIDI data from the MIDI OUT connector.

The selection should be based on the way you intend to use the instrument, when you have an external MIDI sound generator connected.

*The settings for Output Assign and Tx Channel are stored automatically in a song, so you need not perform the write procedure for them.



Tx Channel (MIDI transmit channel) : [1] to [16]

Sets the MIDI transmit channel used by each track.

*The setting for the MIDI transmit channel will be ignored if Output Assign is set to [Int].

[WRITE] (store track parameters in memory)

If the following track parameters are edited, the changes will only be temporary. The settings will revert to their former values if you switch to a different song, etc. To store setting changes that have been made, and have them included as part of the song, you must perform the write procedure with respect to each track.

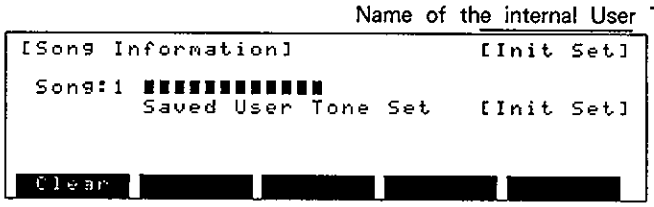
<Track parameters stored in memory>
Type, Key Shift, M/P Mode, Voice Rsv

From the track parameter screen for the track you wish to save changes for, press [WRITE]. When you press [WRITE], the "Are you sure?" message will appear. To store the settings in memory, press [F4] YES. (To cancel, press [F5] NO.) Once the write operation is finished, "Completed" will appear in the display.

⇨The YES/NO selection can also be made using [DEC] (YES), or [INC] (NO).

F2 SngInfo (Song Information)

This is where names are created for songs, and also where song data can be erased.



Song (select a song) : [1] to [8]

Provides for selection of a song.

Song Name

Allows you to create the song name (maximum of 12 characters).

Saved User Tone Set (Name of User Tone set corresponding to the song)

This is the User Tone set that corresponds to the song. It is displayed only for songs which have been saved on disk at least once.

If the name differs from that of the User Tone set contained within the unit, Tones other than those expected could be heard. Always be sure to load the appropriate User Tone set.

F1 Clear

Erases the selected song.

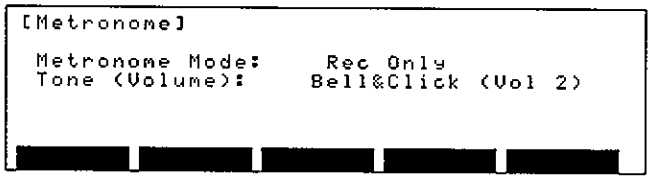
Press F1 Clear and "Are you sure?" is displayed. To carry out the procedure, press F4 YES. (To cancel, press F5 NO.) Once the operation is finished, "Completed" will appear in the display.

<Copyright Notice>

Commercially available song disks often contain comments concerning the person(s) who composed the music. This comment is called the Copyright Notice. When a song that contains a Copyright Notice is selected, the Comment is displayed beneath the "Saved User Tone Set."

F3 Metro (Metronome)

Sets the manner in which the metronome sounds.



⇨The metronome setting applies to all songs (1 to 8). Any change you make in the setting will remain stored in the unit (even while power is off).

Metronome Mode

The following allow you to select the way you wish to use the metronome.

[Rec Only] : Sounds only during recording.
[Rec & Play] : Sounds during both recording and playback.
[Off] : Will not sound.

Tone (Volume) :[Bell & Click (Vol 1)], [Bell & Click (Vol 2)], [Bell & Click (Vol 3)], [Square Click (Vol 1)], [Square Click (Vol 2)]

Provides for selection of the sound (volume) used for the metronome.

*If the volume for track 10 is set too low, the metronome may not be heard.

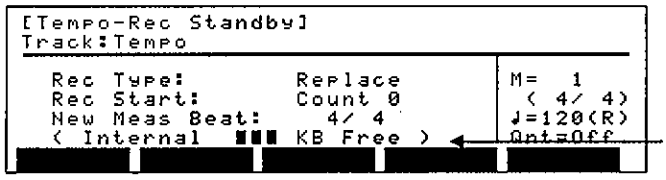
F4 Tempo Recording

When the tempo is changed partway through a song, this feature allows the change to be recorded into the tempo track. Press F4 Tempo, and the unit will enter tempo record standby. (The indicator on REC will be blinking.)

In this screen the settings for tempo recording can be made, and the recording can be carried out.

⇨The tempo track records the change that takes place relative to the original tempo. As a result, the tempo for everything will change if you change the tempo during playback.

*During tempo recording no changes can be made in the settings for Rec Type, Rec Start, and Qnt.



New Meas Beat (New Measure Beat) : [1／2] to [32／2], [1／4] to [32／4], [1／8] to [32／8], [1／16] to [32／16]

Sets the beat of newly recorded measures. The beat will not be changed with respect to tracks in which performance data has already been recorded.

If measures are added during recording, they will have the beat set for New Meas Beat.

♩ = (tempo) : [20] to [240]

Displays the current tempo.

<Tempo Recording Procedure>

① Press PLAY. Recording begins immediately.

② Specify the tempo value using the Dial, numeric keys, or DEC INC.

③ Press STOP. Recording ends. (The indicator on REC goes out.) You are then returned to the sequencer's Basic screen.

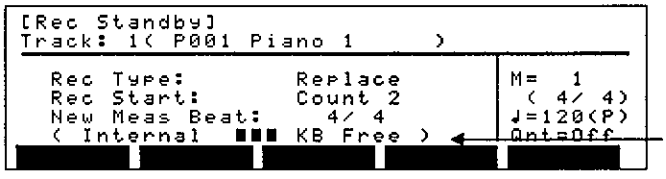
*Although what you play on the keyboard while this recording takes place can be heard, the notes will not be recorded.

REC Real-Time Recording

This selects Real-Time recording standby. (The indicator on REC will be blinking.)

In this screen, the settings for Real-Time recording can be made, and the recording can be carried out.

*Once in the Rec Standby mode, you cannot change the track that is to be recorded.



Rec Type (type of recording)

Selects the method to be used when recording.

[Replace]

If the specified track already contains performance data, that data is erased during recording.

① Press [PLAY]. Recording starts in accord with the setting made for Rec Start. (The [REC] indicator will light.)

② Press [STOP]. Recording stops. (The indicator on [REC] goes out.)

⇨The Replace and Mix methods allow you to perform loop recording, whereby a specified section can be repeated any number of times while you record. (☞p. 4-10)

[Mix]

Existing performance data in the specified track is retained while new material is mixed with it (recorded on top).

① Press [PLAY]. Recording starts in accord with the setting made for Rec Start. (The [REC] indicator will light.)

② Press [STOP]. Recording stops. (The indicator on [REC] goes out.)

[Manual Punch I/O] (Manual Punch In/Out)

While playing back a song, this method allows you to record over a specified section. You specify where recording is to begin by pressing [REC]. When you reach the end of the section you wanted to record over, press [REC] again. Existing performance data will be replaced with new data only while you are in the record mode.

① Press [PLAY]. Playback starts in accord with the setting made for Rec Start.

② Press [REC]. The unit enters the record mode. (The [REC] indicator will light.)

③ Press [REC]. The unit returns to the playback mode. (The indicator on [REC] will be blinking.)

④ Press [STOP]. Recording stops. (The [REC] indicator goes out.)

⇨The [REC] acts like a toggle switch, switching you either into, or out of recording each time it is pressed.

⇨If you wish, a pedal connected to the Pedal Switch jack can also be used to activate the record mode. To set the unit up for this, you must change the setting for Pedal Switch Assign to [Punch I/O]. (☞p. 3-21, p. 4-61)

[Auto Punch I/O] (Auto Punch In/Out)

While playing back a song, this method allows you to re-record a specified section using the Locate function. (☞p. 4-9) Existing performance data will be replaced with new data only while you are in the record mode.

① Press [PLAY]. Playback starts in accord with the setting made for Rec Start.

② The unit enters the record mode at the start point. (The [REC] indicator will light.)

③ The unit returns to the playback mode at the end point. (The indicator on [REC] will be blinking.)

④ Press [STOP]. Recording stops. (The [REC] indicator goes out.)

When set to [Auto Punch I/O], the section specified for recording (using the Locate function) is indicated in terms of measure numbers. If the section has not been specified beforehand, [Rec 1 – 1] is displayed.

Specified section (Starting measure – Ending measure)

*The specified section cannot be changed once recording starts.

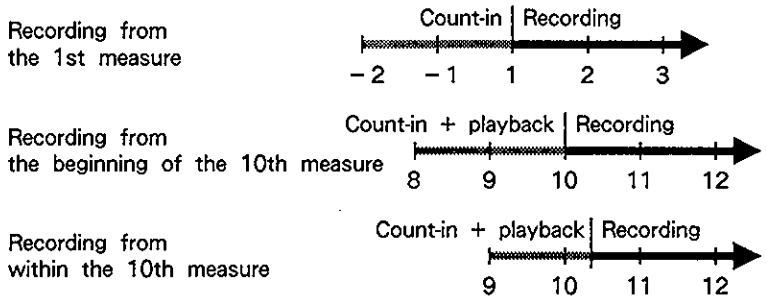
Rec Start (recording start)

Determines the way recording is to start.

*Note that the setting for Rec Start will be invalid if Sync Clock (☞p. 4-63) is set to either [Slave] or [Remote].

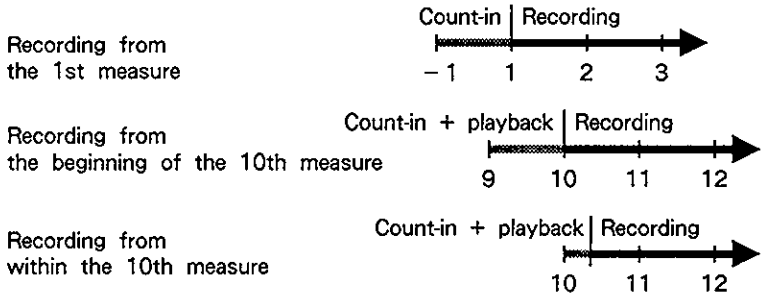
[Count 2]

When you press PLAY, recording starts after a 2 measure count-in.



[Count 1]

When you press PLAY, recording starts after a 1 measure count-in.



[Count 0]

When you press PLAY, recording will start immediately.

[Keyboard]

Recording will start as soon as you press any key on the keyboard. PLAY can also be pressed to immediately begin the recording.

New Meas Beat (New Measure Beat): [1/2] to [32/2], [1/4] to [32/4], [1/8] to [32/8], [1/16] to [32/16]

You must set the beat for the measures before starting to record new measures. The beat will not be changed with respect to measures in which performance data has already been recorded. Note that whenever measures are added during recording, they are added in accord to the beat set in New Meas Beat.

♩ = (tempo) : [20] to [240]

Adjusts the tempo used when recording.

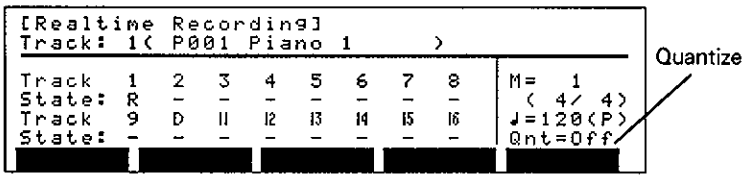
Qnt = (Quantize)

Quantization is a function which corrects the timing errors that may have occurred during Real-Time recording. Correction is made in accord with a specified value. For example, if 1/16 is specified, all the recorded 1/16th notes (and larger note values) will be shifted to fall on their precise divisions of the beat.
This feature is highly useful for instruments, such as drums and bass, where a correctly timed rhythm is desirable.

[Off] No quantization

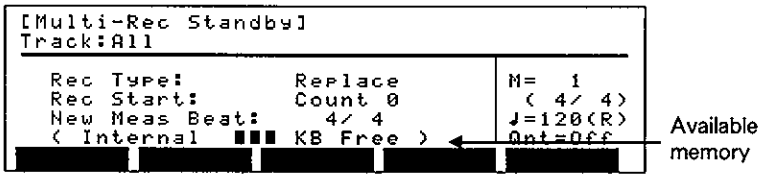
[1/32]	Thirty-second notes	[1/8]	Eighth notes
[1/24]	Sixteenth note triplets	[1/6]	Quarter note triplets
[1/16]	Sixteenth notes	[1/4]	Quarter notes
[1/12]	Eighth note triplets	[1/2]	Half notes

Quantization can also be changed during recording.



SHIFT + REC Multi-Recording

This is the Multi-Rec Standby screen. (The REC indicator will be blinking.)
This screen provides control over recording.



Multi-recording is a method of recording which allows song data created on another sequencer to be recorded into the JW-50. All that is necessary is to have the JW-50 record while an external sequencer carries out playback.
The song data is organized according to the MIDI channel and is recorded into the corresponding tracks on the JW-50. The MIDI receive channel is identical to the track number on the JW-50.

● Multi-recording settings are as follows. They cannot be changed.

Rec Type (type of recording) : [Replace]
Rec Start (recording start) : [Count 0]
Qnt (quantize) : [Off]

●New Meas Beat should be set so it matches the beat of the song you are recording. If the beat differs, the measures will be shifted.

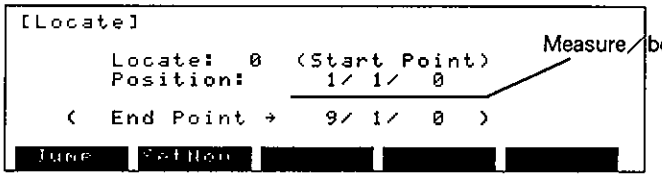
●When syncing the JW-50 to an external sequencer, the tempo data contained in the song can also be recorded at the same time.

<Multi-Recording Procedure>

Press [PLAY] and recording will start immediately.
With the JW-50 synchronized to an external sequencer, recording on the JW-50 will begin when the sequencer starts.

[LOCATE] Locate Function

This screen allows you to set a number of Locate points at desired positions within a song. These points can then be accessed (jumped to) as required.



⇨Each song can be assigned the available Locate points.

⇨When registering the Start point, the End point will appear within the ( ), and conversely, the Start point will appear within the ( ) when registering the End point. This ensures that their positions relative to each other are appropriate.

Locate (Locate Point selection) : [0] to [9]

Here you select the number of a Locate point which you wish to register. Afterwards, you simply specify such points when you wish to jump to them. The various types of Locate points, and how they function, are as follows:

[0] (Start point)
The position from which recording is to start when using the Auto Punch In/Out recording method.
When looping, this is the position from which the repetitions are to begin.
Otherwise, it is a position to which a jump can be made.

[1] to [8] (User point)
Position to which a jump can be made.

[9] (End point)
The position from which recording is to finish when using the Auto Punch In/Out recording method.
When looping, this is the position from which the repetitions will loop back (the end of the looped section).
Otherwise, a position to which a Jump can be made.

Position (position of Locate point)

The position at which you wish to have a Locate point is specified in terms of measure/beat/clock. If the position has already been specified, it will be indicated.

*If you register a point which lies beyond the end of the song, you will not be able to use the Jump and Looping features during playback.

*You should never register an End point that occurs earlier than the Start point, otherwise the looping function will not operate. Auto Punch In/Out recording will also become impossible.

[F1] Jump — Allows you to jump to the selected Locate point.

[F2] SetNow — Allows you to specify the location where you are when you press [F2] as the Locate point. Locate points can be registered in this manner even while a song is playing.

[LOOP] Loop Function

The Loop function allows you to perform the operations below. Loop recording and Real-Time erasing are features which are especially convenient to use when carrying out Real-Time recording of a drum passage.

Loop Play : A specified section is played back any number of times.
Loop recording : A specified section is recorded any number of times.
Real-time erase : Recorded notes (Note Events) are erased in real-time.

*Once playback (or recording) is in progress, [LOOP] cannot be switched on or off, and the looped section cannot be altered.

● Loop Play

From the sequencer's Basic screen, press [LOOP]. The indicator on [LOOP] will light and Loop Play is enabled. The display will show the previously determined loop section in terms of measure numbers.

Press [PLAY], and the loop section will be played back, as many times as you wish.

Loop Section (Start measure – Return-back measure)

```
Song: ■■■■■■■■■■■■■■      [Loop   1 -  16 ]
Kbd Track: 1( P001 Piano 1      )
```

<Indicating and Changing the Loop Section>

The loop section displayed when [LOOP] is pressed relies on, and is defined by, the Locate points (see previous page) which you have set beforehand. It is displayed in terms of measure numbers. If the loop section has not been specified beforehand, [Loop 1 – 1] is displayed. Also, if you move the cursor to the measure number, the loop section can be altered (in one-measure units).

This also applies to loop recording as well.

● Loop Recording

First, from the sequencer's Basic screen press [LOOP], and set the Recording section. Then press [REC], to obtain the loop Recording Standby screen (the Rec standby screen, in which the Recording section is indicated).

Loop section (Start measure – Return-back measure)

```
[Rec Standby]             [Loop   1 -  16 ]
Track: 1( P001 Piano 1      )
```

Select the Rec Type.

[Replace] : Allows a certain passage to be re-recorded any number of times. Convenient for difficult phrases that you may need to try a number of times until you achieve what you desire.

[Mix] : Allows a particular section to be recorded any number of times, with each take being added on top of those before. Convenient for building up a percussion piece.

*[Manual Punch I/O] and [Auto Punch I/O] cannot be selected.

<When [Replace] has been selected for loop recording>

When you press [PLAY], playback will start from the beginning measure. Then, the moment you play the keyboard, the unit enters the record mode, and what you play is recorded (all previously recorded performance data located before the position from which it will loop back will be erased).

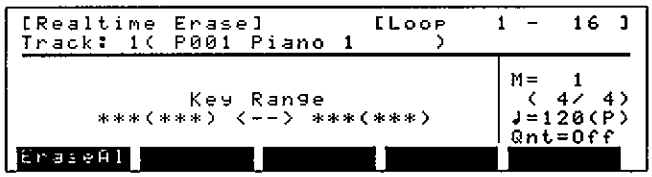
Once the position returns again to the beginning measure, the playback mode is re-selected, allowing you to listen to the music just recorded. If the recorded result wasn't satisfactory, play the keyboard to re-record over the sections that need improvement. Once you have achieved the desired recording, press [STOP].

<When [Mix] has been selected for loop recording>

Press [PLAY], and recording starts from the beginning measure. When the keyboard is played, the notes are recorded on top of the previously recorded performance data. When finished, press [STOP].

● Real-Time Erase

Press [F1] Erase during loop recording to obtain the Real-Time Erase screen.



⇨The display will show the note range where notes are being erased.

⇨Press [EXIT] to return to the Loop Recording screen.

● To erase the note of one key

Press the key for the note. While the key is pressed, all occurrences of that note will be erased.

● To erase all notes in a certain note range

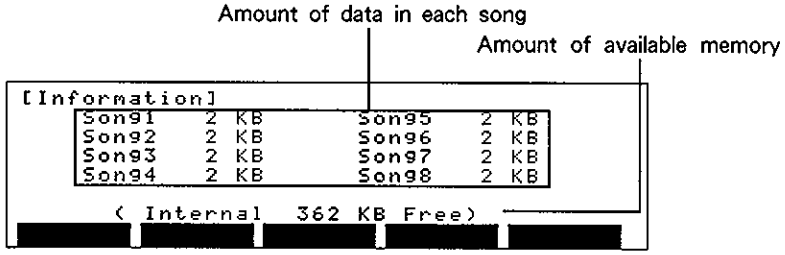
Press the keys corresponding to the upper and lower limits of the note range. While the two keys are pressed, all notes that fall within that range will be erased.

● To erase all performance data

Press [F1] EraseAl. While [F1] is pressed, all performance data in the specified track will be erased.

INFORMATION

This screen allows you to check the amount of data contained within songs and Blocks stored in the internal memory, and to check on how much memory is still available.



During recording, "Out of Memory" will appear in the display if the amount of memory remaining in the unit reaches 0 KB. The procedure cannot be continued. When the amount of free memory becomes low, you must save data on disk, erase unnecessary data, or both.

WRITE and EDIT pressed simultaneously (ROM Play)

The JW-50 contains two demonstration songs stored in ROM which take full advantage of the instrument's multi-timbral sound generation capabilities. Having these demo songs play automatically is known as "ROM Play." This screen provides control over ROM Play.

* During play, nothing can be heard if you play the keyboard.
* The performance data will not be output from MIDI OUT.

⇨Press EXIT to return to the sequencer's Basic screen.

Song (select song) : [1], [2]

Select the song you wish to play.

PLAY — Play begins with the selected song. The two songs will play repeatedly any number of times.

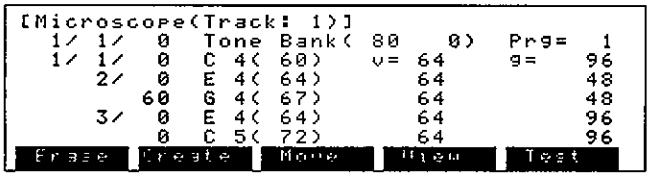
STOP — Press to stop play.

2. SEQUENCER (Microscope/Step Rec)

The Microscope screen allows you to view (and edit) every single MIDI Event that has been recorded into a song. New Events can also be added. Using the Microscope, notes (Note Events) can be entered one by one when carrying out Step recording.

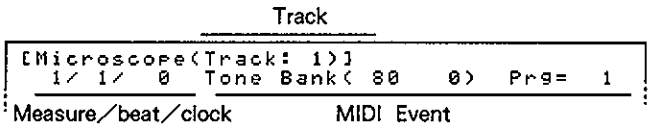
[Microscope screen]

Press [MICRO/STEP] to select the Microscope screen.


[Microscope(Track: 1)]
1/ 1/ 0 Tone Bank(80 0) Prg= 1
1/ 1/ 0 C 4(60) v= 64 g= 96
2/ 0 E 4(64) 64 48
60 G 4(67) 64 48
3/ 0 E 4(64) 64 96
0 C 5(72) 64 96
Erase
Create
Move
View
Test

⇨Press [PLAY] from this screen to play the track displayed.

MIDI Events are displayed in the order in which they were recorded.



Track (selection of track) : [1] to [16], [T] (Tempo), [B] (Beat)

Selects the track for which you wish MIDI Events to be displayed.

⇨To move the cursor to "Track," first move the cursor to the measure number, then press the [◀] cursor key.

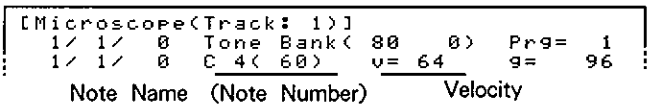
MIDI Event

Using the cursor keys ([▲][▼]), move the cursor to the line on which the MIDI Event you wish to edit is located. Then make the change.

⇨When you move the cursor to the line for a Note Event, the note it represents will sound. Note that a "v=" will appear to the left of a Velocity value, and a "g=" will appear to the left of a Gate Time value.

<Using the keyboard to make changes in Note Events>

The keyboard can also be used to make changes in the Note Number and Velocity.



● Changing Note Numbers

Move the cursor to the Note Number to be changed, and press the key for the note you wish to change it to. The Note Number for that key will now appear in that place in the display.

● Changing the Velocity

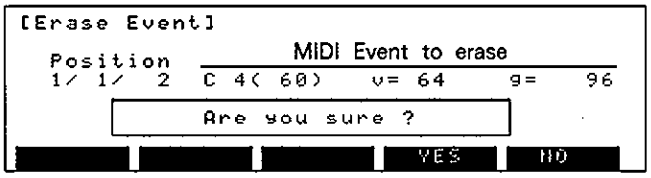
Move the cursor to the Velocity value to be changed, and press a key. The Velocity value corresponding to the force you used to press that key will now appear in that place in the display.

⇨For further details on how to view and understand MIDI Events, and how to make changes in Exclusive Events, refer to the "MIDI Event Chart." (☞p. 6-20)

⇨Any external keyboard that you have connected to this unit can also be used to make changes in the Note Number and Velocity. In order to do this, you do not need to have the external keyboard's MIDI channel matched with the track number.

F1 Erase

Used to erase MIDI Events.
Move the cursor to the Event to be erased and press F1 Erase.



F4 YES — The displayed MIDI Event will be erased.
F5 NO — Cancels the procedure.

*If the Beat track is selected, you will not be able to switch to the Erase Event screen.
*After erasing a MIDI Event, the subsequent MIDI Events will not be shifted forward.

F2 Create

Allows new MIDI Events to be created.
Use the numeric keys to specify the position at which the event is to be created, then press F2 Create.

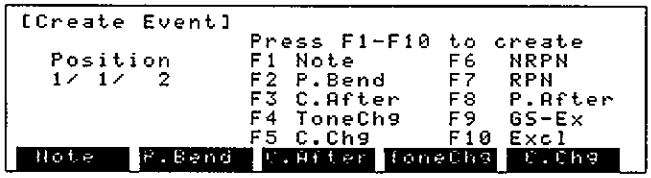
*If the Beat track is selected, you will not be able to switch to the Create Event screen.
*After creating a MIDI Event, the subsequent MIDI Events will not be shifted downward.

<When specifying a position that would be located beyond the song's last measure>

If a MIDI Event located beyond the song's last measure is created, the measure containing that MIDI Event then becomes the last measure in the song. The beat of the newly added measure(s) will be the same as the beat of the last measure that was there before the addition.

< For Tracks 1 to 16 >

Use the function keys to select the MIDI Status (type of MIDI message) that is to be created. Once a MIDI Status has been selected, the MIDI Event will be entered at the specified position, and you are returned to the Microscope screen. Since any selected MIDI Status will initially be assigned its default value, you will often need to change the value.



⇨For further details on how to view and understand MIDI Events, and how to create GS Exclusive and Exclusive Events, refer to the "MIDI Event Chart." (☞p. 6-20)

⇨The position at which an event has been created can be altered from within the Create Event screen.

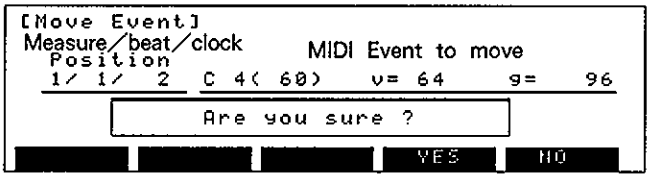
F1 Note	Note	
F2 P.Bend	Pitch Bend	
F3 C.After	Channel Aftertouch	
F4 ToneChg	Tone Change	
F5 C.Chg	Control Change(1 to 5, 7 to 31, 64 to 95, 120 to 122, 124 to 127)	
SHIFT + F1 NRPN	Non-registered Parameter Number	
SHIFT + F2 RPN	Registered Parameter Number	
SHIFT + F3 P.After	Polyphonic Aftertouch	
SHIFT + F4 GS-Ex	GS Exclusive	
SHIFT + F5 Excl	Exclusive	

< For the Tempo Track >

When you press F2 , a Tempo Change Event will be entered at the specified position. You will then be returned to the Microscope screen, where you can alter the value for the event as needed, since such events will always carry their default value when created.

F3 Move

Employed to move MIDI Events to other positions within the same track. Move the cursor to the MIDI Event you wish to move and press F3 Move.



*If the Beat track is selected, you will not be able to switch to the Move Event screen.

*After moving a MIDI Event, the MIDI Events after the destination for the move will not be shifted backward.

Position (position to which to move)

Specifies the position of the destination of the move.

⇨The position displayed when you press F3 Move will be the position of the MIDI Event at which the cursor was located before you pressed F3 Move.

<When specifying a position that would be located beyond the song's last measure>

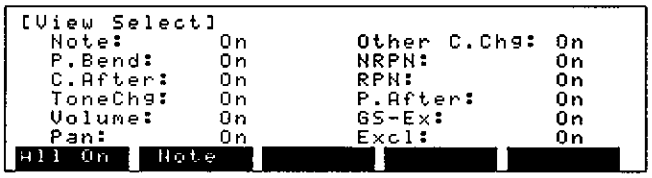
If you move a MIDI Event to a position located beyond the song's last measure, the measure containing that MIDI Event then becomes the last measure in the song. The beat of the newly added measure(s) will be the same as the beat of the last measure that was there before the addition.

F4 YES — The MIDI Event is moved to the specified destination.
F5 NO — Cancels the procedure.

F4 View

Allows for selection of the MIDI Events you wish to have displayed in the Microscope screen. Any MIDI Statuses which you do not wish to be displayed should be set to [Off].

*If the beat track or tempo track is selected, you will not be able to switch to the View screen.



Note	Note
P.Bend	Pitch Bend
C.After	Channel Aftertouch
ToneChg	Tone Change
Volume	Volume
Pan	Pan
Other C.Chg	Control Change (1 to 5, 8, 9, 11 to 31, 64 to 95, 120 to 122, 124 to 127)
NRPN	Non-registered Parameter Number
RPN	Registered Parameter Number
P.After	Polyphonic Aftertouch
GS-Ex	GS Exclusive
Excl	Exclusive

F1 All On — All MIDI Statuses are turned [On].
F2 Note — Only Note Events are turned [On].

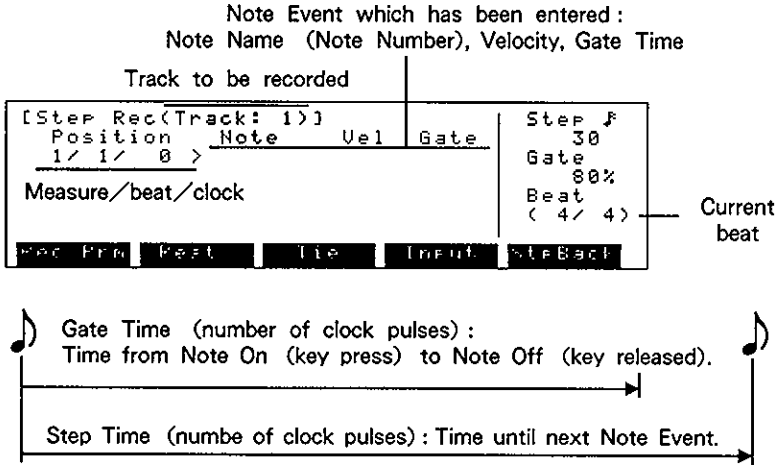
F5 TestOut

Press F5 TestOut, and any MIDI message on the line where the cursor is will be output to the internal sound sources/MIDI OUT connector. Also, if F5 is pressed when the cursor is at a Note Event, that note will be played, allowing you to confirm the sound.

⇨MIDI messages will be output to the internal sound sources/MIDI OUT connector in accord with the settings you have made for Output Assign (☞ p. 4-3) for the selected track.

REC Step Recording

The REC indicator lights when you enter the Step Rec screen, which is where you can record a song by entering Note Events one by one.



⇨MIDI Events other than Note Events need to be entered from the Microscope screen.

*If the tempo track or beat track is selected, you will not be able to switch to the Step Rec screen.
*Songs cannot be played from the Step Rec screen.
*When Step Recording, all Note Events will be entered into the track after you have finished creating all of them.
*All performance data that was originally located in the section where Note Events have been entered will be erased once the recording is finished.

Step (Step Time) : [1] to [999]

Sets the Step Time.

⇨There are 120 clock pulses per quarter note.

<Note symbol and numerical settings>

There are two ways for setting the Step Time value; either as a note symbol or as a number. Pressing F4 alternates between selection of these two choices.

● Using note symbols (indicated to the right of "Step")

The Step Time value can be entered by pressing the numeric key which has the desired note printed above it.

● Using numbers

Press the appropriate numeric keys to enter the value (number of clock pulses), then press ENTER.

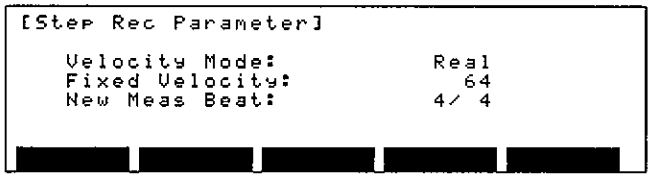
Gate (Gate Time factor) : [1] to [200] %

When carrying out Step recording using the keyboard, the Gate Time will be entered automatically. The actual value for this Gate Time will match the Gate Time factor that you set here.

The higher the value, the longer the Gate Time becomes. At 100% its length will be identical to the Step Time.

F1 RecPrm (Step Rec Parameter)

When entering Note Events using the keyboard, this setting determines the method to be used for entering Velocity values and the beat of measures being recorded.



Velocity Mode

Provides selection for the method to be used for entering Velocity values.

[Real] : A velocity value that directly reflects the strength with which you press a key will be entered.

[Fix] : Regardless of the strength with which a key is played, the velocity value will remain constant.

Fixed Velocity : [1] to [127]

Sets the value of velocity when the Velocity Mode is set to [Fix].

New Meas Beat (New Measure Beat) : [1/2] to [32/2], [1/4] to [32/4], [1/8] to [32/8], [1/16] to [32/16]

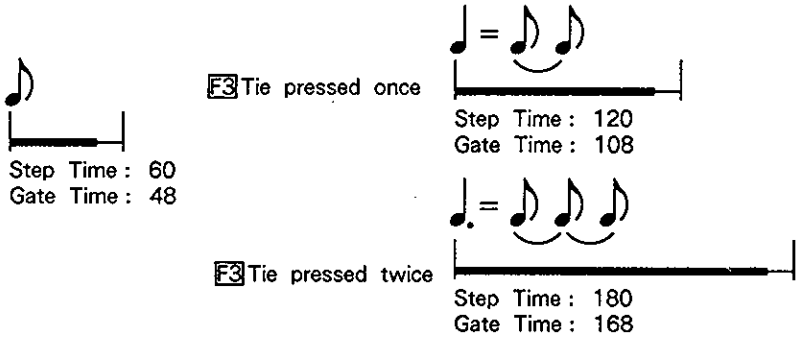
You must set the beat before starting to record new measures. (The beat will not change with respect to previously recorded tracks.) If measures have been added during recording, they will conform to the beat set in New Meas Beat.

F2 Rest (input of rests)

Enters a rest having the same duration as the displayed Step Time value. (Note Events are not actually input, but data is advanced by an amount equal to the Step Time value.)

F3 Tie (input of ties)

With each press of F3, the duration of the Step Time value and Gate Time for the last Note Event entered will be extended. The Gate Time will be extended by an amount equal to the displayed Gate Time factor.



F4 Input (Step Time input method)

This allows you to select whether you wish to use note symbols or clock pulses when entering the Step Time value. Each press of F4 alternates between selection of the two choices. When a note symbol appears next to "Step," you will be able to use note symbols for input.

F5 StpBack or ◀◀ (re-enter previous Note Event)

Takes you back to the previous line, allowing you to replace the Note Event at that position.

SHIFT + F1 NxtMeas (enters rests through to the end of the measure)
or ▶▶

The insertion point for Note Events is advanced to the beginning of the next measure.

<Step Recording Using the Keyboard>

Note Events can be entered simply by pressing the keys on the keyboard. When a key is pressed and released, the values below are entered. The position automatically advances by the displayed Step Time value.

Note (Note Number)	:Note Number of the key pressed.
Vel (Velocity)	:Entered in accord with the setting for Velocity.
Gate (Gate Time)	:Entered in accord with the setting for Gate Time.

⇨Press STOP and the Note Events that have been entered will be recorded, and you are returned to the Microscope screen.

● Entering chords

A chord is played and then released. Or, with a hold pedal depressed, you can press the keys of a chord one at a time. Afterwards, release all the keys, then release the pedal.

● Entering rests 1

After setting the Step Time value to equal the duration of the rest required, press F2 Rest.

● Entering rests 2

Press F4 Input. Set it so the Step Time value is entered using note symbols. Then, while holding down SHIFT, press the numeric key which corresponds to the rest value you wish to enter.

<Using the numeric keys for Step recording>

① Press the ◀ cursor key, and the cursor will move to the Note Number for the Note Event. The default value is displayed.

② Change the value for the Note Number and press ENTER.
Move the cursor to Velocity.

③ Change the value for Velocity and press ENTER.
Move the cursor to Gate Time.

④ Change the value for Gate Time and press ENTER.
It will advance by the displayed Step Time value and await input of the next Note Event. The value of the displayed Note Event will be equivalent to the value of the previous Note Event.

⇨The Note Number can also be specified in terms of its note name. (☞p. 1-5)

⇨Until the Gate Time is confirmed, you will be able to alter the value of the Note Event by moving the cursor there and changing it.

⇨To enter a Note Event that is identical to the previous one, simply press ENTER.

●Entering chords

Since chords involve entering Note Events at the same position, the Step Time value to the next Event is set to 0. To set the Step Time value to 0, hold down [SHIFT] and press [ENTER] when confirming the Gate Time.

●Entering rests

Rests can be entered using the same method that was explained on the previous page.

*If you enter a rest while the cursor is at a chord's Note Event, that Note Event will be erased.

3. MIXER

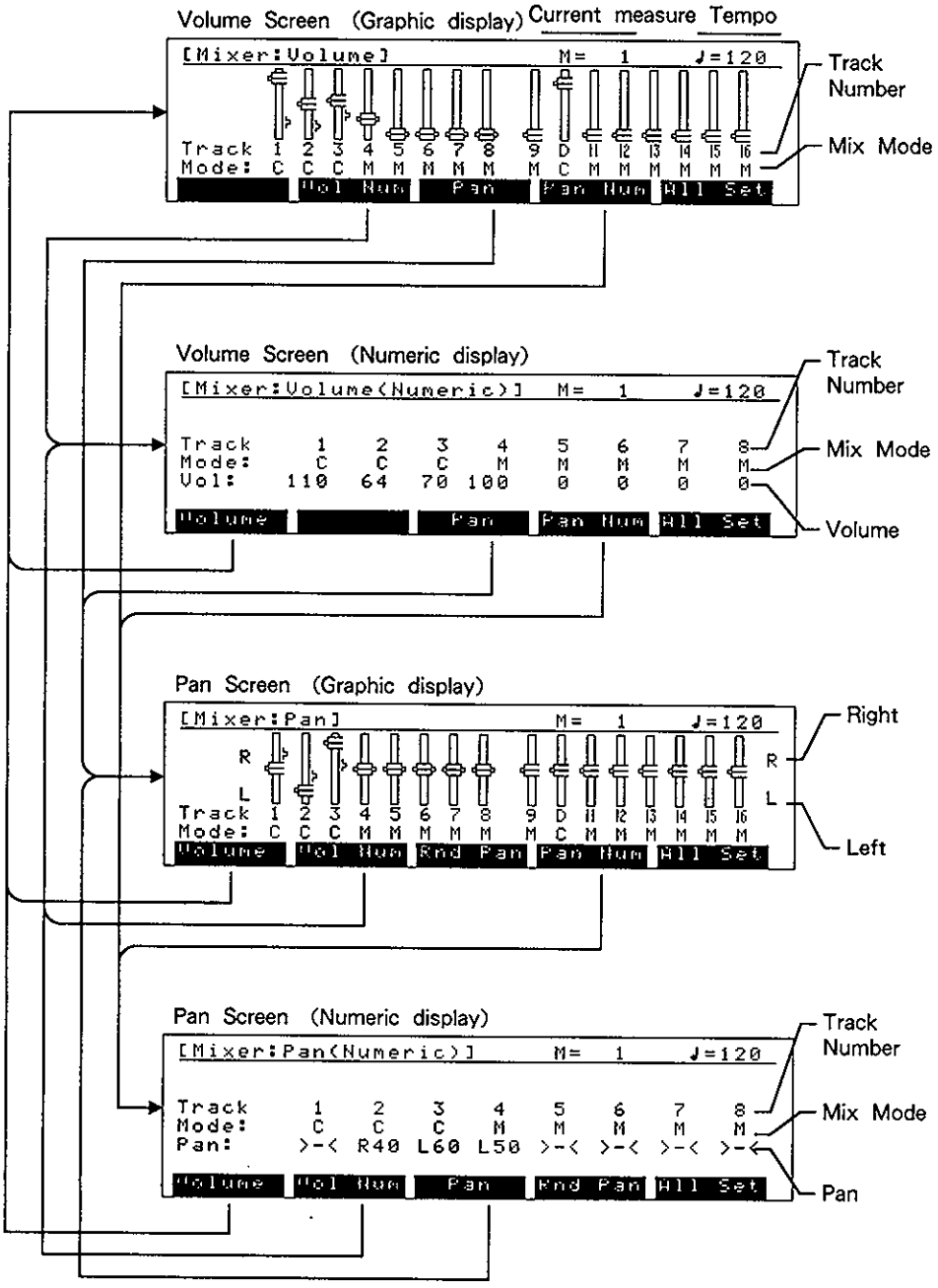
In the Mixer mode, the 8 faders are available for control over the Volume and Pan (localization within the sound field for stereo output) for any of the tracks. Changes in Volume/Pan can be recorded while playback of a song takes place. Also, the displayed settings can be recorded at whatever position required.

[Mixer screen]

Press [MIXER] to select the Mixer screen. The Mixer Mode provides 4 screens which can be selected using the function keys. The basic procedures used are the same for each screen.

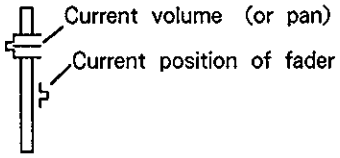
*Settings for Volume/Pan which have not been recorded are only temporary. The settings will revert to their former values as soon as you switch to a different song, or perform any similar procedure.

Volume Screen (Graphic display)



<Graphic Representation of the Faders>

The two symbols that are shown allow you to view the current settings and determine the position of the faders.



*If the Mix mode is set to Manual, you must move the fader until you have the symbols aligned with each other, otherwise you will not be able to obtain any actual change in the Volume/Pan.

3

TRACK SEL — Allows for selection of the track to be controlled using the faders.

With the upper indicator lit : tracks 1 to 8

With the lower indicator lit : tracks 9 to 16

M = (the current measure)

Allows you to specify the measure number from which playback/recording is to start.

♩ = (tempo) — Provides adjustment of the tempo to be used for playback/recording.

Mode (Mix Mode)

Provides for selection of the type of control that the mixer will provide (on an individual track basis).

COMPU (C) :Control takes place based on the recorded Volume/Pan data. Volume/Pan will not change even if the faders are moved.

MANUAL (M) :The movement of the faders controls Volume/Pan. The recorded Volume/Pan data provides no control.

*If the Random Pan setting has been recorded into the song, the Random Pan effect will be obtained even if "Manual" has been selected for the Mix Mode.

<Changing the Mix Mode for individual tracks>

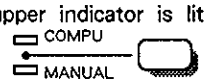
Move the cursor to the track for which the Mix Mode change is to be made and use the Dial or DEC INC to change the setting.

<Changing the Mix Mode for all tracks at once>

Press COMPU/MANUAL, which switches alternately between the two modes.

⇨In sequencer's Basic screen, you can press COMPU/MANUAL and set the mode to Manual, after which you will be able to use the 8 faders to control the volume.

When the upper indicator is lit : COMPU



When the lower indicator is lit : MANUAL

Vol (Volume) : [0] to [127]

Provides adjustment of the Volume for each track using the faders.

Pan : [R63] (right) to [>-<] (center) to [L63] (left), or [Rnd] (random)

Provides adjustment of the Pan for each track using the faders.

<Random (sound image is randomly panned)>

To set the unit to Random with the screen showing the numeric display, move the cursor to the value for the "Mix mode" and change it to [M], then press [F4]. Afterwards, to revert to the former value, simply press [F4] again.

To make the Random setting when starting from the graphic display, move the cursor to the value for the "Mix mode" and change it to [M], then press [F3].

While any track is set to Random, no change in the Pan will be obtained when the faders are moved.

*The Random feature will work only with respect to the internal sound sources.

[F5] All Set

Records the displayed settings at the current measure position. From the graphic display, press [F5] to record into tracks 1 to 16. From the numeric display, settings are recorded into tracks 1 to 8, or tracks 9 to 16.

*Nothing will be recorded into tracks which do not yet contain performance data.

*Pressing [F5] will not work while playback/recording of a song is in progress.

[REC] (Mixer recording) .....

This function allows you to record the changes in Volume/Pan (while playback takes place) produced as a result of using the faders. Before pressing [REC], use [TRACK SEL] to select the track so the faders can be used to control the Volume/Pan while recording.

① Specify the measure from which recording is to start.

② Press [REC] and the unit is placed in record standby. (The [REC] indicator should be blinking.)

③ Specify the track to be recorded.
Move the cursor to the Mix mode for the track to be recorded, and set it to [R]. Multiple tracks can also be specified.

④ Move the fader for the track to be recorded all the way down, then move it all the way up. As a result, it will be set to the volume level that is to be used when recording begins.

⑤ Press [PLAY] and recording will start immediately. (The [REC] indicator lights).

⑥ Move the faders to produce the desired result.

⑦ Press [STOP]. (The [REC] indicator goes out.)

*If Volume/Pan has previously been recorded, that data will be erased while recording takes place.

*Any changes you might make in the tempo during the recording will not be recorded in the tempo track.

*The Random Pan setting will not be recorded while Mixer Recording is used.

⇨The metronome will sound in accord with whatever settings have been made for it in the Sequencer mode. (☞p. 4-4)

<Volume/Pan Data>

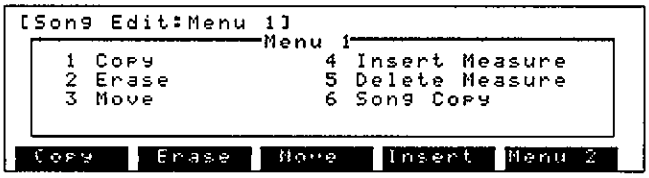
The recorded Volume/Pan data is handled in the same way as performance data recorded while in the Sequencer mode. Thus, after the recording has been completed, the Volume/Pan data (MIDI Events) can be viewed and edited using the Microscope screen.

4. SONG EDIT

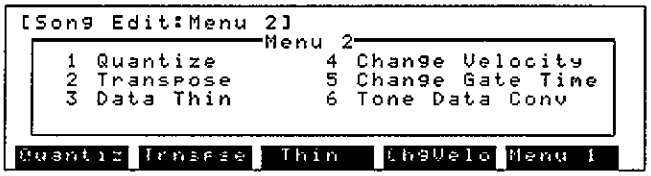
Provides for editing of recorded songs.

【Song Edit Menu】

Press [SONG EDIT] to select the Song Edit:Menu 1 screen. The Song Edit mode provides 2 menu screens which can be selected by pressing [F5]. You can then choose the desired procedure from the menu.



[F1] 1 Copy : Copies a portion of a song to another position.
[F2] 2 Erase : Erases a portion of a song.
[F3] 3 Move : Moves a portion of a song to another position.
[F4] 4 Insert Measure : Inserts empty measures.
[SHIFT] + [F1] 5 Delete Measure : Deletes a portion of a song.
[SHIFT] + [F2] 6 Song Copy : Copies a portion of a song to another song.



[F1] 1 Quantize : Corrects timing inaccuracies of notes recorded in real-time.
[F2] 2 Transpose : Transposes (shifts the pitch of) selected notes.
[F3] 3 Data Thin : Removes Pitch Bend and Aftertouch data to regain some of the memory space a song occupies.
[F4] 4 Change Velocity : Alters the keyboard's response to playing strength (velocity).
[SHIFT] + [F1] 5 Change Gate Time : Changes the duration of notes (Gate Time).
[SHIFT] + [F2] 6 Tone Data Conv : Stores the settings for the Tones used by a song as part of the song.

<Basic Procedure>

First, select the desired procedure. Then, after targeting the section for editing and making the settings that select the type of editing, press [F1] Execute. ("Are you sure ?" will be displayed.)

To carry out the procedure, press [F4] YES. (To cancel, press [F5] NO.) When the operation is finished, "Completed" will appear in the display.

<Reverting to the previous state (Undo)>

When editing is complete within any screen, you can play back the song to hear the results. If you are not satisfied, you can press [F5] Undo to retrieve the settings that existed before editing began.

---

*With certain types of settings, it will take a few moments after executing the procedure before you see the "Completed" message.

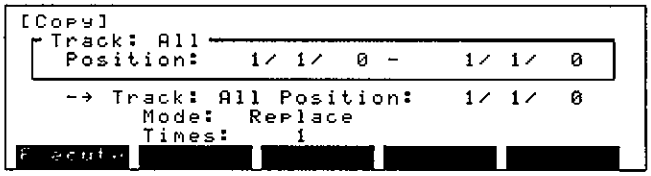
⇨The YES/NO selection can also be made using [DEC] (YES), or [INC] (NO).

*If you switch to a different screen, you will not be able to revert to the previous settings.

F1 1 Copy (Menu 1)

Copies a portion of a song to another position. A useful function when a phrase or section recurs throughout a song.

⇨To copy a portion of some other song, use Song Copy. (☞p. 4-31)



Track (track to copy from)

Specify the track containing the performance data that is to be copied.

[All] : all tracks (including the beat track)
[1] to [16] : any one track
[T] : tempo track

Position (section to copy)

Specify the beginning and end of the performance data (in measure/beat/clock format).

—→ Track (track at the destination of the copy) : [All], [1] to [16], [T]

Select the track that is the destination for the copy.

*The destination track can be selected only if the copy source track is set to [1] to [16].

Position (location of copy destination)

Specifies the beginning of the copy destination (in measure/beat/clock format).

Mode (copy method)

Provides selection for whether you wish to erase the performance data at the copy destination, or preserve it.

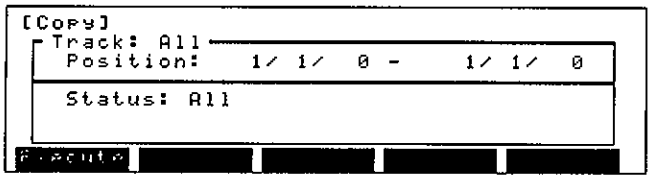
[Replace] : Erases the performance data at the copy destination.
[Mix] : Adds new data on top of the existing performance data.

Times (number of copies) : [1] to [100]

If a number of copies are to be made at the destination, specify the number of copies.

F1 Execute

The window which allows you to select the MIDI Status will appear.



*To return to the screen immediately before this, press EXIT.

Status (MIDI Status to be copied)

Select the MIDI Status (type of MIDI Event) to copy.

⇨For further details on MIDI Events, refer to CHAPTER 5, "GLOSSARY."

Display	MIDI Status
All	All MIDI Statuses
Note	Notes
P. Bend	Pitch Bend
C. After	Channel Aftertouch
ToneChg	Tone Changes
Volume	Volume
Pan	Panpot
Other C. Chg	Other Control Changes
NRPN	Non-registered Parameter Number
RPN	Registered Parameter Number
P. After	Polyphonic Aftertouch
GS-Excl	GS Exclusive
Excl	Exclusive

⇨GS Exclusive refers to Exclusive messages which are directed to the internal sound sources.

Range (note range to be copied) : [C-1 (0)] to [G9 (127)]

When [Note] or [P. After] has been selected, the note range to be copied can be specified.

⇨The note range to be copied can also be specified using the keyboard.

C. Chg No (Control Number to copy) : [All], [1] to [5], [8], [9], [11] to [31], [64] to [95], [120] to [122], [124] to [127]

When [Other C. Chg] has been selected, specify the Control Number of the MIDI Event to be copied.

F1 Execute To carry out the procedure, press F4 YES. (To cancel, press F5 NO.) When the operation is finished, "Completed" will appear in the display.

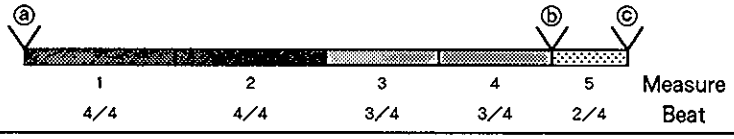
⇨If you are not satisfied with the end result, press F5 Undo. All previous settings will be retrieved. For details, see p. 4-23

⇨Refer to the following page for examples of how the Copy function works.

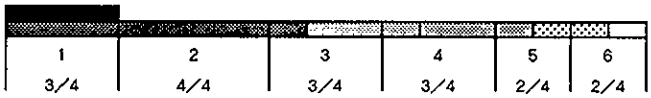
<When copying the performance data for all tracks>

When copied, the beat of the source material will be copied along with it. If the beat of the source and the destination of the copy are different, the beat will change, and subsequent measures will be shifted. However, playback of the song will be unaffected, since the shift only affects the way the measures are displayed.

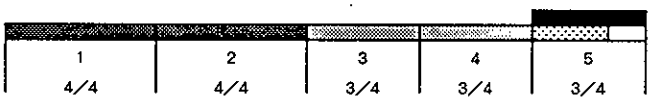
Example : Copying the 3rd measure (3/4). (Mix)



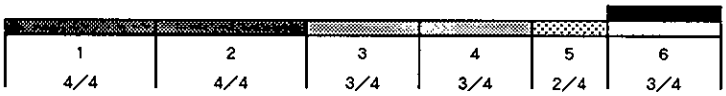
Copied to ⓐ. The beat of the measures at the destination will change, and the measures for the subsequent performance data will be shifted forward. Since measure 1 is then shorter by one beat, the second beat of measure 5 cannot be unaccommodated. Therefore, a measure having the same beat as the last measure will be added.



Copied to ⓑ. The beat of the measures at the destination will change.



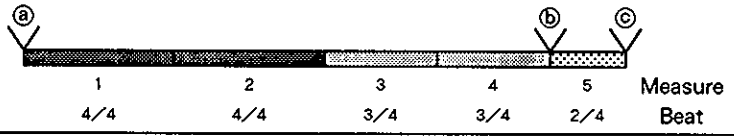
Copied to ⓒ. A measure having the same beat as the copy-source measure will be added.



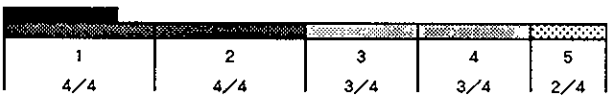
<When copying the performance data for one track>

Even when the beat at the copy destination and the beat of the performance data being copied are different, the beat of the measures at the destination will not change.

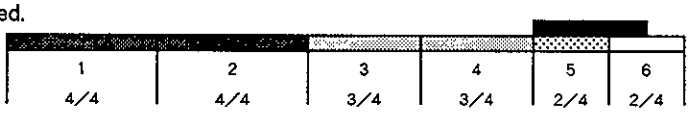
Example : Copying the 3rd measure (3/4) of track 1 to track 2. (Mix)



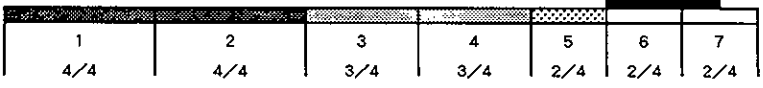
Copied to ⓐ.



Copied to ⓑ. A measure having the same beat as the final measure will be added.

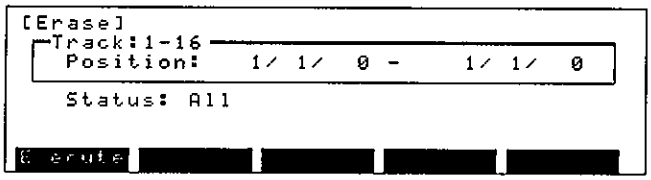


Copied to ⓒ. A measure having the same beat as the final measure will be added.



F2 2 Erase (Menu 1) ·····

Erases a portion of a song. Used when wishing to erase unwanted performance data.



Track (the target track)

Specifies the track containing the performance data to be erased.

[1 – 16] : tracks 1 through 16
[1] to [16] : any one track
[T] : tempo track

Position (range to be erased)

The beginning and end of the performance data to be erased is specified in terms of measure/beat/clock.

Status (MIDI Status to be erased)

Selects the MIDI Status (type of MIDI Event) to be erased.

⇨For further details on MIDI Events, refer to CHAPTER 5, "GLOSSARY."

Display	MIDI Status
All	All MIDI Statuses
Note	Note
P. Bend	Pitch Bend
C. After	Channel Aftertouch
ToneChg	Tone Changes
Volume	Volume
Pan	Panpot
Other C. Chg	Other Control Changes
NRPN	Non-registered Parameter Number
RPN	Registered Parameter Number
P. After	Polyphonic Aftertouch
GS-Excl	GS Exclusive
Excl	Exclusive

⇨GS Exclusive refers to Exclusive messages which are directed to the internal sound sources.

Range (Note Range to be erased) : [C-1 (0)] to [G9 (127)]

When [Note] or [P. After] has been selected, the note range to be erased can be specified.

⇨The note range can also be specified using the keyboard.

C. Chg No (Control Number to be erased) : [All], [1] to [5], [8], [9], [11] to [31], [64] to [95], [120] to [122], [124] to [127]

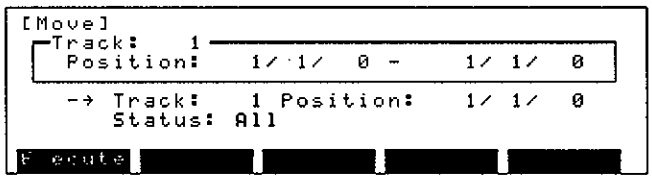
When [Other C. Chg] has been selected, specify the Control Number of the MIDI Event to be erased.

F1 Execute To carry out the procedure, press F4 YES. (To cancel, press F5 NO.) When the operation is finished, "Completed" will appear in the display.

⇨If you are not satisfied with the end result, press F5 Undo. All previous settings will be retrieved. For details, see p. 4-23.

F3 3 Move (Menu 1) ·····

Allows a section of a song to be moved to another location. If there already is performance data at the destination, that data will be erased.



Track (track from which to move)

Specifies the track containing the performance data to be moved.

[1] to [16] : any one track
[T] : tempo track

Position (section to be moved)

The beginning and end of the performance data to be moved is specified in terms of measure/beat/clock.

—→ Track (track at destination) : [1] to [16], [T]

This selects the destination track.

*If the tempo track has been selected as the source track, only the tempo track can be selected as the destination.

Position (destination)

The beginning point of the destination section is specified in terms of measure/beat/clock.

Status (MIDI Status to be moved)

To move only a specific type of MIDI Event, specify the MIDI Status (type of MIDI Event).

⇨For further details on MIDI Events, refer to CHAPTER 5, "GLOSSARY."

Display	MIDI Status
All	All MIDI Statuses
Note	Notes
P. Bend	Pitch Bend
C. After	Channel Aftertouch
ToneChg	Tone Changes
Volume	Volume
Pan	Panpot
Other C. Chg	Other Control Changes
NRPN	Non-registered Parameter Number
RPN	Registered Parameter Number
P. After	Polyphonic Aftertouch
GS-Excl	GS Exclusive
Excl	Exclusive

⇨GS Exclusive refers to Exclusive messages which are directed to the internal sound sources.

Range (note range to move) : [C-1 (0)] to [G9 (127)]

When [Note] or [P. After] has been selected, you can specify the note range that is to be moved.

⇨The note range can also be specified using the keyboard.

C. Chg No (Control Number to move) : [All], [1] to [5], [8], [9], [11] to [31], [64] to [95], [120] to [122], [124] to [127]

When [Other C. Chg] has been selected, specify the Control Number of the MIDI Event to be moved.

F1 Execute

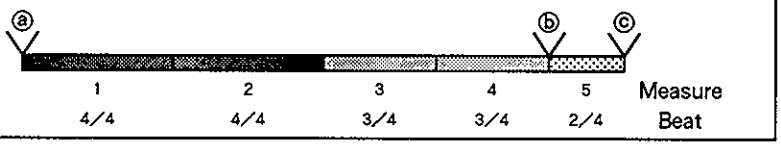
To carry out the procedure, press F4 YES. (To cancel, press F5 NO.) When the operation is finished, "Completed" will appear in the display.

⇨If you are not satisfied with the end result, press F5 Undo. All previous settings will be retrieved. For details, see p. 4-23.

<How the Move function works>

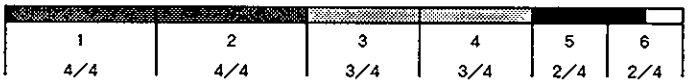
Even when the beat at the move destination and the beat of the performance data being moved are different, the beat of the measures at the destination will not change.

Example : Moving the 3rd measure (3/4) of track 1 to track 2.

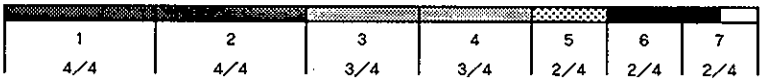


Moved to ⓐ.

Moved to ⓑ. A measure having the same beat as the final measure will be added.

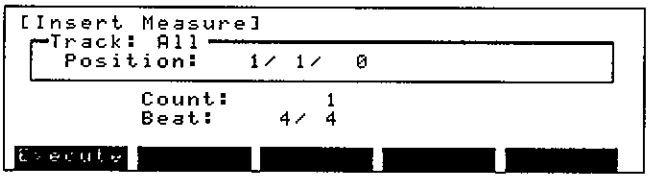


Moved to ⓒ. A measure having the same beat as the final measure will be added.



F4 4 Insert Measure (Menu 1) .....

Allows empty measures to be inserted at desired positions within a song. The empty measures are inserted into all tracks .



Position (the destination for insertion)

Specifies the measure where the new measures are to be inserted.

Count (number of empty measures) : [1] to [100]

Specifies the number of empty measures to be inserted.

Beat (beat of the empty measures) :[1/2] to [32/2], [1/4] to [32/4], [1/8] to [32/8], [1/16] to [32/16]

Sets the beat that the empty measures are to have.

F1 Execute

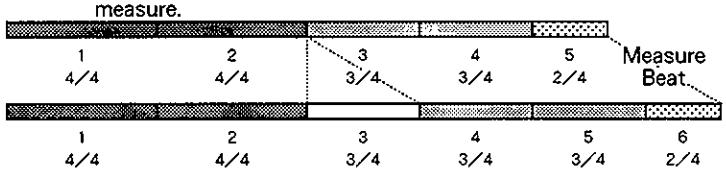
To carry out the procedure, press F4 YES. (To cancel, press F5 NO.) When the operation is finished, "Completed" will appear in the display.

⇨If you are not satisfied with the end result, press F5 Undo. All previous settings will be retrieved. For details, see p. 4-23.

<How the Insert Measure function works>

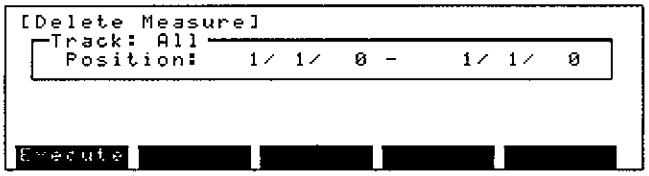
The measures that follow the inserted empty measures will be shifted backward.

Example : An empty measure (3/4 meter) is inserted at the 3rd measure.



SHIFT + F1 5 Delete Measure (Menu 1)

Erases (deletes) a section of a song. When performance data is deleted, the performance data for all tracks is shifted forward.



Position (section to be deleted)

The beginning and end of the performance data to be deleted is specified by measure numbers.

F1 Execute

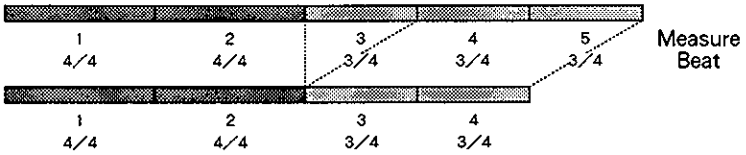
To carry out the procedure, press F4 YES. (To cancel, press F5 NO.) When the operation is finished, "Completed" will appear in the display.

⇨If you are not satisfied with the end result, press F5 Undo. All previous settings will be retrieved. For details, see p. 4-23.

<How the Delete Measure function works>

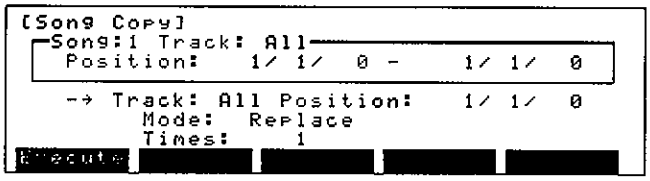
The measures that follow the deleted section are shifted forward.

Example : The 3rd measure is deleted.



SHIFT + F2 6 Song Copy (Menu 1)

Copies a section from another song into the currently selected song. This function makes it easy to use phrases from other songs.



Song (song from which to copy) : [1] to [8]

Specify the song containing the performance data that is to be copied.

Track (track to copy from)

Specify the track containing the performance data that is to be copied.

- [All] : all tracks (including the beat track)
- [1] to [16] : any one track
- [T] : tempo track

Position (section to copy)

Specify the beginning and end of the performance data that is to be copied in terms of measure/beat/clock.

-→Track (track at the destination of the copy.) : [All], [1] to [16], [T]

Select the track that is the destination for the copy.

*The destination track can be selected only if the copy source track is set to [1] to [16].

Position (location of copy destination)

Specifies the beginning of the copy destination in terms of measure/beat/clock.

Mode (copy method)

Provides selection for whether you wish to erase the performance data at the copy destination, or preserve it.

- [Replace] : Erases the performance data at the copy destination.
- [Mix] : Data is added on top of (mixed with) the existing performance data.

Times (number of copies) : [1] to [100]

If several copies are to be made at the destination, specify the number of copies.

F1 Execute

To carry out the procedure, press F4 YES. (To cancel, press F5 NO.) When the operation is finished, "Completed" will appear in the display.

⇨If you are not satisfied with the end result, press F5 Undo. All previous settings will be retrieved. For details, see p. 4-23.

⇨The process which takes place as a result of Song Copy is the same as that for F1 Copy. For examples, refer to p. 4-26

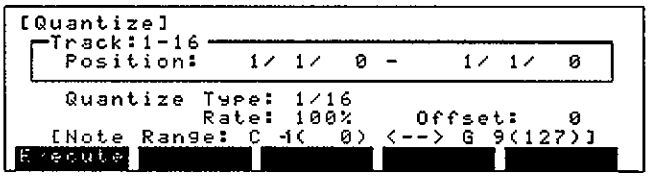
<Copyright Notice>

Commercially available song disks often contain comments such as those concerning the person(s) who composed the music. This comment is called the Copyright Notice. When a song that is to be the source for a copy is one that contains a Copyright Notice, the Copyright Notice will be displayed when F1 Execute is pressed. To continue with the procedure, press F4 YES.

F1 1 Quantize (Menu 2)

Quantization is a function which corrects the timing errors that may have occurred during Real-Time recording. Correction is made in accord with a specified value. This feature is highly useful for instruments, such as drums and bass, where a correctly timed rhythm is desirable.

*Quantize cannot adjust the timing of Events other than Note Events. If the data contains other types of MIDI Events, the music could end up sounding rather strange.



Track (track to be quantized)

Select the track containing the performance data that is to be quantized.

[1 – 16] : tracks 1 through 16

[1] to [16] : any one track

Position (section to be quantized)

Specify the beginning and end of the performance data that is to be quantized in terms of measure/beat/clock.

Type

Specifies the quantize value.

[1/32]	Thirty-second notes	[1/6]	Quarter note triplets
[1/24]	Sixteenth note triplets	[1/4]	Quarter notes
[1/16]	Sixteenth notes	[1/2]	Half notes
[1/12]	Eighth note triplets	[Shuffle 16]	Shuffle 16
[1/8]	Eighth notes	[Shuffle 8]	Shuffle 8

⇨Select Shuffle to quantize a 'shuffle' rhythm.

Rate : [0] to [100] %

Sets the extent to which the notes will actually be aligned with the specified quantize value. The higher the value, the less discrepancy there will be in the timing. At [100], the notes will be shifted to have perfect timing.

Offset : [– 99] to [+ 99] (clock units)

Allows for the quantize timing to be shifted slightly forward or backward. This allows you to obtain rhythms that are slightly laid back (behind the beat) or 'pushed' (in front of the beat).

Less than 0 : pushed

More than 0 : laid back

Note Range (note range to be quantized) : [C-1 (0)] to [G9 (127)]

Specifies the range of note numbers that are to be quantized. This setting should be made if you wish to quantize only a specific note range.

⇨The note range can also be specified using the keyboard.

F1 Execute

To carry out the procedure, press F4 YES. (To cancel, press F5 NO.) When the operation is finished, "Completed" will appear in the display.

⇨If you are not satisfied with the end result, press F5 Undo. All previous settings will be retrieved. For details, see p. 4-23.

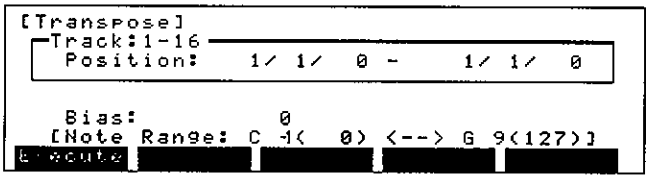
●If as a result of quantization the song has been lengthened, measures having the same beat as the last measure will be added.

●If as a result of quantization there are notes that would occur before the starting measure, they are placed in the first beat of the first measure.

F2 2 Transpose (Menu 2) ·····

Provides for the transposition of notes. Can be used to transpose a whole song or any section of a song.

⇨As a result of transposition, the Note Numbers of Note Events and Polyphonic Aftertouch will shift in accord with the setting for Bias.



Track (track to transpose)

Select the track containing the performance data you wish to transpose.

[1 – 16] : tracks 1 through 16 (except Drum track)

[1] to [16] : any one track

Position (range to be transposed)

Specify the beginning and end of the performance data to be transposed in terms of measure/beat/clock.

Bias (amount of transposition) : [– 24] to [+ 24] (semitone units)

Specifies the amount of transposition (in semitone units).

Note Range (note range to be transposed) : [C-1 (0)] to [G9 (127)]

Specifies the range of note numbers that are to be transposed. This selection is made when wishing to transpose only the Note Events in a specific note range.

⇨The note range can also be specified using the keyboard.

F1 Execute

To carry out the procedure, press F4 YES. (To cancel, press F5 NO.) When the operation is finished, "Completed" will appear in the display.

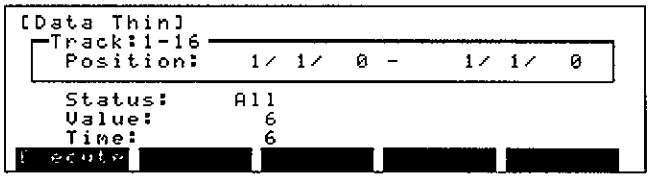
⇨If you are not satisfied with the end result, press F5 Undo. All previous settings will be retrieved. For details, see p. 4-23.

●After transposition, Note Numbers that have taken on a value of less than 0 (or more than 127) are converted to 0 (or 127).

F3 3 Data Thin (Menu 2) .....

A number of types of data that are recorded when using the Mixer are of the continuously changing type, such as Volume/Pan, as well as Aftertouch and Pitch Bend. For this reason, a surprisingly large amount of unnecessary data can accumulate.

The Data Thinning feature allows you to thin out a considerable portion of such unneeded data, without affecting the overall quality of the music as perceived by the listener.



Track (track to be thinned)

Select the track containing performance data you wish to have thinned out.

[1 – 16] : tracks 1 through 16

[1] to [16] : any one track

Position (range to be thinned)

The beginning and end of the performance data to be thinned is specified in terms of measure/beat/clock.

Status (MIDI Events to be thinned)

Selects the MIDI Status (type of MIDI Event) to be thinned.

Display	MIDI Status
All	All MIDI Statuses listed below :
P. Bend	Pitch Bend
C. After	Channel Aftertouch
Modulation	Modulation
Volume	Volume
Pan	Panpot
Expression	Expression
P. After	Polyphonic Aftertouch

Value (span of data to be thinned) : [0] to [99]

Sets the span over which data is to be thinned. The larger the value, the wider the span becomes. With MIDI data that contains a great deal of wide-ranging, abrupt changes, the value should be increased.

Time (time span for thinning) : [0] to [99]

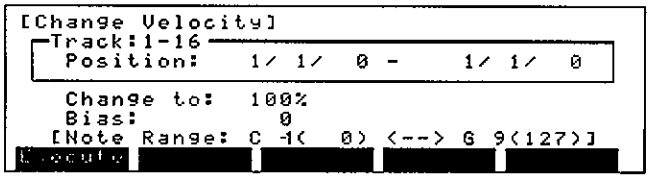
Sets the time span over which data is to be thinned. The larger the value, the wider the time span becomes. With MIDI data that changes very gradually, the value should be increased.

F1 Execute To carry out the procedure, press F4 YES. (To cancel, press F5 NO.) When the operation is finished, "Completed" will appear in the display.

⇨If you are not satisfied with the end result, press F5 Undo. All previous settings will be retrieved. For details, see p. 4-23.

F4 4 Change Velocity (Menu 2) .....

Employed to modify the keyboard's response to playing strength (Velocity). Depending on the type of modification made, any unintentional, erratic differences in playing strength can be smoothed out; or the keyboard's touch can be made softer or harder overall.



Track (track to be modified)

Specify the track containing the performance data that you wish to modify.

[1 – 16] : tracks 1 through 16

[1] to [16] : any one track

Position (section to modify)

Specify the beginning and end of the performance data that is to be modified in terms of measure/beat/clock.

Change to (modification factor) : [0] to [200] %

The possible difference in Velocity can either be increased or decreased using this setting. With the difference at a minimal level, there will be no noticeable change in volume. To reduce the difference by half, set it to [50]%.

[101] % or more : results in increased difference .

[100] % : no change.

[99] % or less : difference is reduced.

⇨The Velocity difference is calculated based on a mean value of 64.

Bias (amount added) : [– 99] to [0] to [+ 99]

This setting allows you to change the overall response that the keyboard will provide. With a value of +10, the Velocity value will be increased by 10.

Note Range (note range to modify) : [C-1 (0)] to [G9 (127)]

Specify the range of note numbers that are to be modified.

⇨The note range can also be specified using the keyboard.

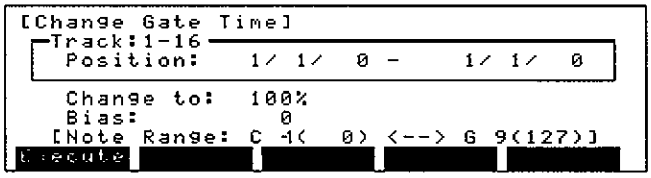
F1 Execute To carry out the procedure, press F4 YES. (To cancel, press F5 NO.) When the operation is finished, "Completed" will appear in the display.

⇨If you are not satisfied with the end result, press F5 Undo. All previous settings will be retrieved. For details, see p. 4-23.

●After the modification, Velocity values that have taken on a value of less than 1 (or more than 127) are converted to 1 (or 127).

SHIFT + F1 5 Change Gate Time (Menu 2) ·····

Employed to modify the Gate Time (the time a key is held down). Depending on the type of modification made, a performance can be made to sound either more staccato (short, distinctly separate notes) or legato (notes held for full value).



Track (track to be converted)

Specify the track containing the performance data that you wish to modify.

[1 – 16] : tracks 1 through 16

[1] to [16] : any one track

Position (section to modify)

Specify the beginning and end of the performance data that is to be modified in terms of measure/beat/clock.

Change to (modification factor) : [0] to [200] %

This setting extends/reduces the Gate Time. When set to 50%, the Gate Time is reduced by half.

[101] % or more : Gate Time is extended

[100] % : No change

[99] % or less : Gate Time is reduced

Bias (amount added) : [– 99] to [0] to [+ 99]

This setting allows the Gate Time to be uniformly increased (or decreased) by a specified amount. With a value of 10, the Gate Time for everything will be increased by 10 clock pulses.

Note Range (note range to modify) : [C-1 (0)] to [G9 (127)]

Specify the range of note numbers that are to be modified.

⇨The note range can also be specified using the keyboard.

F1 Execute

To carry out the procedure, press **F4** YES. (To cancel, press **F5** NO.) When the operation is finished, "Completed" will appear in the display.

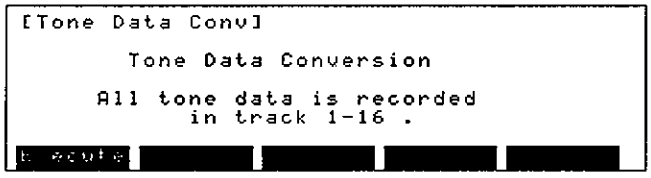
⇨If you are not satisfied with the end result, press **F5** Undo. All previous settings will be retrieved. For details, see p. 4-23.

●After the modification, if the Gate Time has taken on a value of less than 1 (or more than 60,000) it defaults to 1 (or 60,000).

SHIFT + F2 6 Tone Data Conv (Menu 2) ·····

This function allows you to convert the Tone data contained in a song to Tone data which is compatible with the GS Format. Tone data should be converted in the following situations:

- When using the Chain Load function to play a number of songs in succession. Any other situation in which you are playing back songs that may not be appropriately matched to the unit's User Tone set.
- When wishing to use another GS Format sound generator for playback.



F1 Execute

To carry out the procedure, press F4 YES. (To cancel, press F5 NO.) When the operation is finished, "Completed" will appear in the display.

⇨If you are not satisfied with the end result, press F5 Undo. All previous settings will be retrieved. For details, see p. 4-23.

<Tone data after conversion>

- Tone Change Number of the source GS Tone (GS Bank Select, Program Change)
- Tone Parameter settings(Control Change's NRPN)

<Caution>

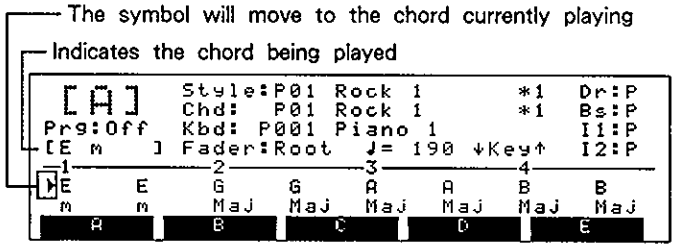
As the result of a tone data conversion, notes might be delayed in a few places. This could occur as a result of the extra amount of time needed for processing when the Tone data in multiple tracks has been recorded at the same timing.
To alleviate this problem, you can simply erase unneeded tone data, or shift somewhat the timing at which Tone data is recorded.

5. BACKING (Block/Make Song)

The Backing function is used to create accompaniment for songs.

[BLOCK]

Press [BLOCK] to obtain the Block screen. The Block screen provides for the creation of Blocks (4 measures of accompaniment), and allows for such Blocks to be recorded into the sequencer.


The symbol will move to the chord currently playing
Indicates the chord being played
[A] Style:P01 Rock 1 *1 Dr:P
Chd: P01 Rock 1 *1 Bs:P
Prg:Off Kbd: P001 Piano 1 I1:P
[E m] Fader:Root ♩= 190 ↓Key↑ I2:P
1 2 3 4
E m E m G Maj G Maj A Maj A Maj B Maj B Maj
A B C D E

[ ] (the displayed Block) : [A] to [J]

Indicates the displayed Block. Blocks are selected using the function keys.

Prg (Program On/Off) : [On], [Off]

Provides selection for the manner Blocks are to be played when [PLAY] is pressed.

[On] : Plays the displayed Blocks in the order set in the Make Song screen.

[Off] : Plays the displayed Blocks.

Style (Music Style)

Selects the Music Style.

[P1 *1] to [P30 *1] : Original

[P1 *2] to [P30 *2] : Variation 1

[P1 *3] to [P30 *3] : Variation 2

⇨The Preset Chord Changes contain chord progressions that are geared toward the style of music provided by the Music Style with the same number.

Chd (Chord Change)

Selects the original Chord Change (4 measure chord progression).

Preset Chord Changes

[P1 *1] to [P30 *1] : Original

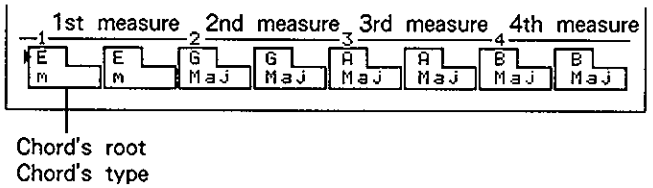
[P1 *2] to [P30 *2] : Variation 1

[P1 *3] to [P30 *3] : Variation 2

User Chord Change

[U1] to [U50]

The display will show the settings for the selected Chord Change.



⇨The note names for the black keys [#] and [♭] will be displayed in accord with the Note Name setting. (☞ p. 4-61)

Kbd (keyboard's Tone)

Select the Tone that will be heard when playing the keyboard.

[P1] to [P128] : Preset Tone

[U1] to [U128] : User Tone

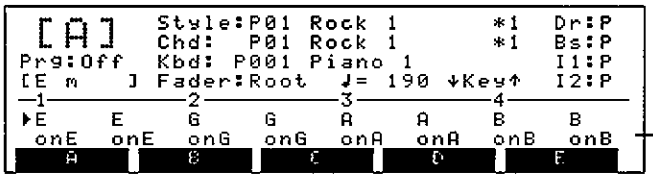
Fader (function)

Selects the function that the 8 faders will provide.

[Root] : Selection of the chord's Root

[Type] : Selection of the chord's Type

[Bass] : Selection of the chord's Bass note


[A] Style:P01 Rock 1 *1 Dr:P
Chd: P01 Rock 1 *1 Bs:P
Prg:Off Kbd: P001 Piano 1 I1:P
[E m] Fader:Root ♩= 190 ↓Key↑ I2:P
1 2 3 4
▶E E G G A A B B
onE onE onG onG onA onA onB onB
A B C D E
Bass note indicated here

<Using keys to change the fader function>

● ROOT/TYPE is pressed to select between [Root] and [Type].

[Root] : ROOT indicator lights

[Type] : TYPE indicator lights

● While holding down SHIFT, press ROOT/TYPE to switch to [Bass].
(ROOT and TYPE indicators go out.)

♩ = (tempo) : [20] to [240]

Sets the tempo at which the Blocks are to be played.

*If you change to a different Music Style when not playing anything, the tempo will be set to that of the selected Music Style.

↓ Key ↑ (transposition)

Used to transpose the whole chord. Move the cursor to " ↓ Key ↑ " and adjust the amount of transposition desired (semitone units) using DEC INC.

Dr (Drum Part), Bs (Bass Part), I1 (Instrument 1 Part), I2 (Instrument 2 Part)

Allows any individual Part to be muted. To mute a Part, move the cursor to that Part, and change [P] (Play) to [M] (Mute).

⇨Mute settings can be set individually for each Block.

Function keys (Block selection)

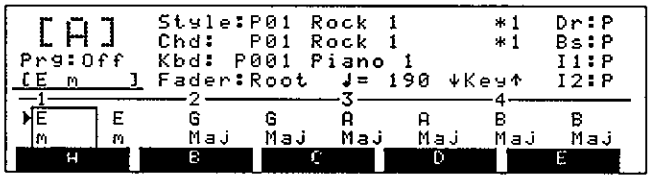
Employed to select the Block for which settings are to be displayed.

F1 to F5 : Blocks A to E

SHIFT + (F1 to F5) : Blocks F to J

PLAY

Provides for the play of Blocks.
The display allows you to view the name of the chord currently being played.



⇨If you change to a different Music Style while playing something, the actual change will occur when the current Music Style has finished playing.

<When Prg is [Off]>

When Loop is ON (LOOP indicator is lit), the displayed Block will play repeatedly. When Loop is OFF (LOOP indicator is off), the displayed Block will be played once.

⇨When Prg is [Off], the order in which the Blocks were played will be temporarily stored in memory. This playing order can be recalled by pressing F3 Recall from the Make Song screen.

<When Prg is [On]>

When Program is set to [On], the Blocks are played in the order set in the Make Song screen.
When Loop is OFF (LOOP indicator is off), play will stop automatically when the last Block has finished. When Loop is ON (LOOP indicator is lit), play starts again from the first Block after the last Block has finished.

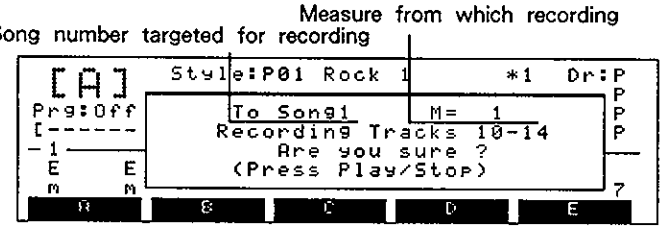
REC (record into sequencer)

Before pressing REC, you first need to get ready as follows:

1) From the sequencer's Basic screen, select the destination Song Number, and specify the measure from which recording is to begin.
2) If you wish to record while specifying Blocks, set Prg to [Off], and Loop to ON. If wishing to record in the order previously determined in the Make Song screen, set Prg to [On] and Loop to OFF.

Press REC and the unit enters standby, waiting for recording to begin.

Measure from which recording
Song number targeted for recording



<Recording Blocks as you play them in sequence>

①Press PLAY. Recording begins after a 2 measure count-in.
Change Blocks in the sequence you wish to record.
②Press LOOP. After the displayed Blocks have played, recording finishes. (The REC indicator goes out.)

< Recording Blocks in the order set in the Make Song screen >

Press [PLAY]. Recording begins after a 2 measure count-in.
The Blocks are recorded in the set order. The recording will stop when the last Block is played.(The [REC] indicator goes out.)

<Tracks Targeted for Recording>

The music will be recorded into the following tracks:

Drum Part	: track 10 (D)
Bass Part	: track 11
Instrument 1 Part	: track 12
Instrument 2 Part	: track 13
What is played on the keyboard	: track 14
Beat for the performance	: Beat track

<Precautions Concerning Recording>

● When Blocks are recorded, some of the Track parameters will be changed to the settings below. Caution should be taken if you have modified any settings for track parameters before beginning recording, since they will revert to their previous values.

1)Voice Rsv (all track) :Initial value (☞p. 2-3)
2)Track 10 to 14 :Key Shift=0, M/P Mode=Poly

●What is played by the instruments will not be recorded into Parts which are muted. However, information on the instruments used (Tone Changes) will be recorded.

●If the tempo is changed during recording, it will not be recorded into the tempo track.

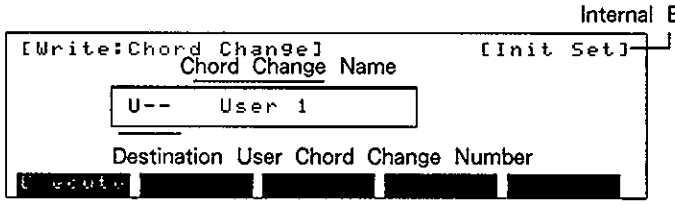
●If performance data exists in the track targeted for recording, that performance data will be erased as the recording takes place.

● Whatever performance data you have recorded into the sequencer can be edited in the same way as ordinary recordings of performance data. However, since GS Tones are employed for the backing provided by Blocks, the Tone Parameters are handled in a manner that is different than that with Preset or User Tones. For that reason you need to be careful, since if you use a User Tone along with a track in which backing has been recorded (such as during editing), the manner in which the other Tones sound could change.

WRITE
(storing Chord Change settings in memory) ·····

A created Chord Change can be stored as a User Chord Change. Chord Changes that you use frequently can be conveniently stored so they are available whenever you need them.

⇨To return to the Block screen, press EXIT.



Specify the number of the User Chord Change at the storage destination, and give it a name (up to 12 characters).

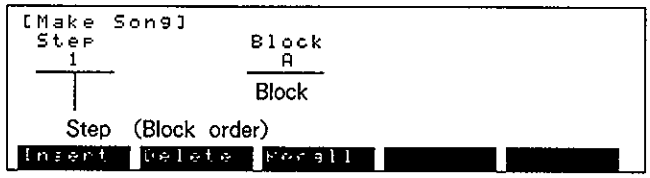
F1 Execute

Press F1 Execute and the "Are you sure?" message will appear in the display. To proceed, and store it in memory, press F4 YES. (To cancel, press F5 NO.) When the write operation is finished, "Completed" will appear in the display.

⇨The YES/NO selection can also be made using DEC (YES), or INC (NO).

[MAKE SONG]·····

Press MAKE SONG to obtain the Make Song screen. In the Make Song screen you can set the order in which the Blocks are to play, or record Blocks into the sequencer in the set order.



Block : [A] to [J]

Specify the Blocks in the order in which they are to play. Use the Dial to select the Block, then press ENTER. The unit will then be ready for your next Block selection on the following Step.

⇨Up to a total of 100 Steps can be specified.

F1 Insert

Inserts a Block at the Step indicated by the cursor. The Block that is inserted will be identical to the one at the Step where the cursor is located. Should you wish a different Block to be there, it should be changed.

F2 Delete

Erases the Block indicated by the cursor.

F3 Recall

The order in which the Blocks were played most recently from the Make Song screen is temporarily stored in memory. By pressing F3, this stored order will be recalled, and will replace the settings in the Make Song screen. To revert to the previous order, press F3 again.

PLAY　Results in the play of the Blocks located from the cursor position until the last Step.

⇨When Loop is ON (LOOP indicator is lit), play will start again from the first Block, after the last Block has finished playing.

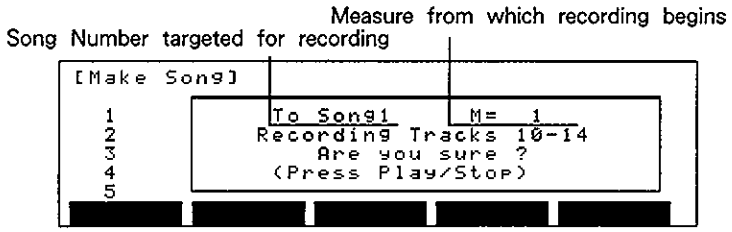
REC (record into sequencer)

In the Make Song screen, the Block accompaniment is recorded into the sequencer in the set order.

Before pressing REC, you first need to get ready for recording as follows:

1) From the sequencer's Basic screen, select the destination Song Number, and specify the measure from which recording is to begin.
2) Check to make sure the indicator on LOOP is extinguished.
3) Press RESET, and move the cursor back to Step 1.

Press REC, and the unit enters standby, waiting for recording to begin.



<Recording Procedure>

Press PLAY.　Recording begins after a 2 measure count-in.
The Blocks are recorded in the set order. The recording will stop when the last Block is played.(The REC indicator goes out.)

<Tracks targeted for recording>

Blocks will be recorded into the following tracks.

Drum Part	: track 10 (D)
Bass Part	: track 11
Instrument 1 Part	: track 12
Instrument 2 Part	: track 13
What is played on the keyboard	: track 14
Beat for the performance	: beat track

<Precautions Concerning Recording>

●When Blocks are recorded, some of the Track parameters will be changed to the settings below. Caution should be taken if you have modified any settings for track parameters before beginning recording, since they will revert to their previous values.

1)Voice Rsv (all track)　:Initial value(☞p. 2-3)
2)Track 10 to 14　:Key Shift=0, M/P Mode=Poly

●If the tempo is changed during recording, it will not be recorded into the tempo track.

●If performance data exists in the track targeted for recording, that performance data will be erased as the recording takes place.

●What is played by the instruments will not be recorded into Parts which are muted. However, information on the instruments used (Tone Changes) will be recorded.

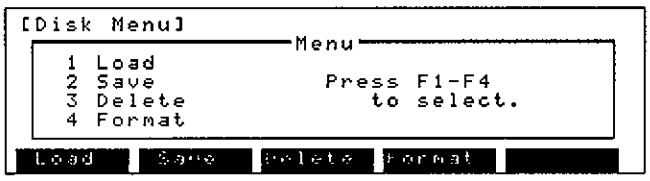
● Whatever performance data you have recorded into the sequencer can be edited in the same way as ordinary recordings of performance data. However, since GS Tones are employed for the backing provided by Blocks, the Tone Parameters are handled in a manner that is different than that with Preset or User Tones. For that reason you need to be careful, since if you use a User Tone along with a track in which backing has been recorded (such as during editing), the manner in which the other Tones sound could change.

6. DISK

The Disk Menu provides a complete range of procedures (except the Chain Load setting) required when working with disks. These include procedures for saving your recorded song data onto disk, and for loading data on disk back into the unit's main memory.

[Disk Menu]

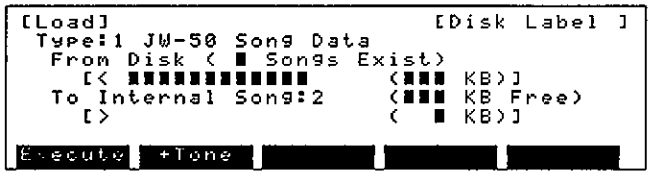
Press [DISK] to obtain the Disk Menu screen.
Once you have a disk inserted in the drive, you can select the desired procedure from the screen's menu.



[F1] Load : Copies data from disk into the unit's memory.
[F2] Save : Saves the data contained in the unit's memory onto disk.
[F3] Delete : Erases data on the disk.
[F4] Format : Applies the standard format to the disk so it can be used with JW-50.

[F1] Load

Copies data from disk into the unit's memory. This is referred to as "loading." Before pressing [F1], insert a disk containing data into the disk drive.



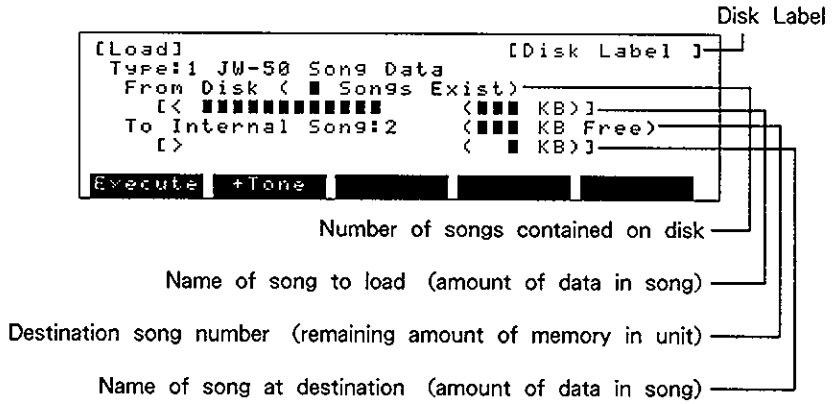
Type (type of data to be loaded)

Here you need to select the type of data you wish to load.

[1 JW-50 Song Data] : JW-50 songs
[2 SMF Song Data] : Standard MIDI File Songs
[3 User Tone Set] : User Tone sets (U1 to U128)
[4 Backing Set] : Backing sets (Block A to J and User Chord Change Set (U1 to U50))

When the Type has been set to [1. JW-50 song Data].

Loads a JW-50 song.



From Disk (song to be loaded)

Select the song to be loaded from disk.

To Internal song (number of song to be loaded) : [1] to [8]

Specify the number of the song at the destination for the load.

*If song data exists at the destination for the load, that song data will be erased if you proceed and load a new song.

[F1] Execute
[F2] + Tone

To load only the song data, press [F1] Execute.
To load the corresponding User Tone set along with the song, press [F2] +Tone.

If there is no song at the destination for the load, the song will be loaded when you press [F1] Execute. Otherwise, "Are you sure ?" is displayed. To proceed with the load, press [F4] YES. (To cancel, press [F5] NO.)

*Whenever a message appears, refer to the "Message Chart" (☞ p. 6-3) and take the necessary action.

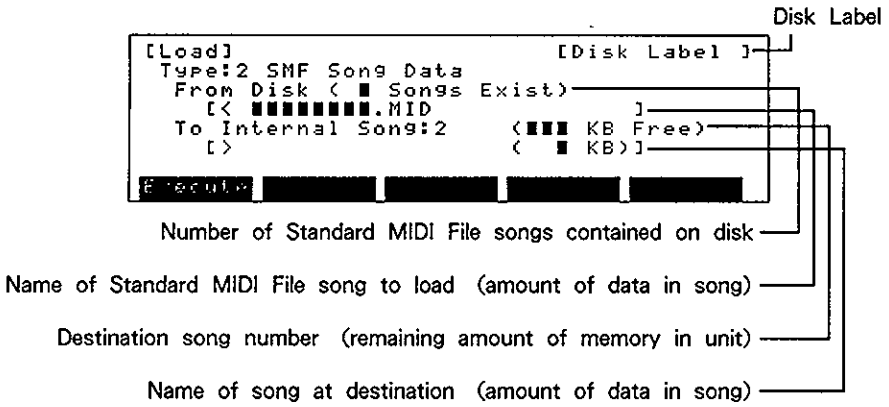
⇨Whenever a song that contains a Copyright Notice is loaded, the notice will be displayed briefly.

<When the User Tone Sets Differ>

If the User Tone set that belongs with the song differs from the User Tone set contained within the unit, Tones other than those expected could be heard when the song is played. To avoid this, always be sure to load the appropriate User Tone set along with the song.

When Type has been set to [2. SMF Song Data]

Allows for a Standard MIDI File to be converted into a JW-50 song when loaded. When converted to JW-50 song data, the performance data for the various channels is routed to the respective tracks. Data for Channel 1 goes to track 1, that for Channel 2 goes to track 2, and so forth.


Disk Label
[Load]
[Disk Label]
Type:2 SMF Song Data
From Disk (■ Songs Exist)
[< ■■■■■■■■.MID]
To Internal Song:2 (■■■ KB Free)
[> (■ KB)]
Execute
Number of Standard MIDI File songs contained on disk
Name of Standard MIDI File song to load (amount of data in song)
Destination song number (remaining amount of memory in unit)
Name of song at destination (amount of data in song)

From Disk (Song to be loaded)

Select the Standard MIDI File song that you wish to load.

To Internal song (number of song to be loaded) : [1] to [8]

Specify the number of the song at the destination for the load.

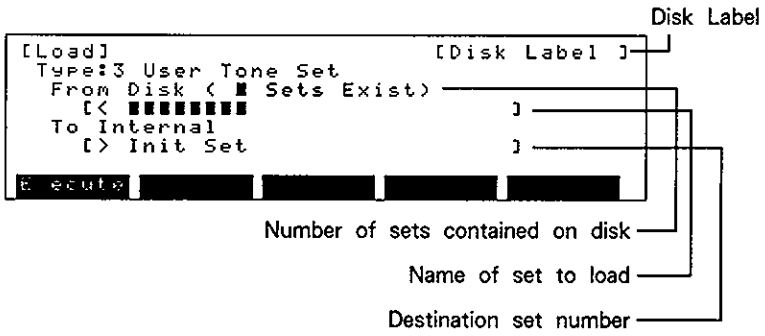
[F1] Execute

If there is no song data at the destination for the load, the song will be loaded when you press [F1] Execute.

If song data exists at the destination for the load, "Are you sure ?" is displayed. To proceed with loading, press [F4] YES. (To cancel, press [F5] NO.)

When Type has been set to [3 User Tone Set]

Employed to load a User Tone set (U1 to U128).



*You will not be able to select Standard MIDI Files which are not supported by the JW-50. For details, refer to "Concerning Song Data." (☞ p. 2-4)

*If song data exists at the destination for the load, that song data will be erased if you proceed and load a new song.

*Whenever a message appears, refer to the "Message Chart" (☞ p. 6-3) and take the necessary action.

⇨Whenever a song that contains a Copyright Notice is loaded, the notice will be displayed briefly.

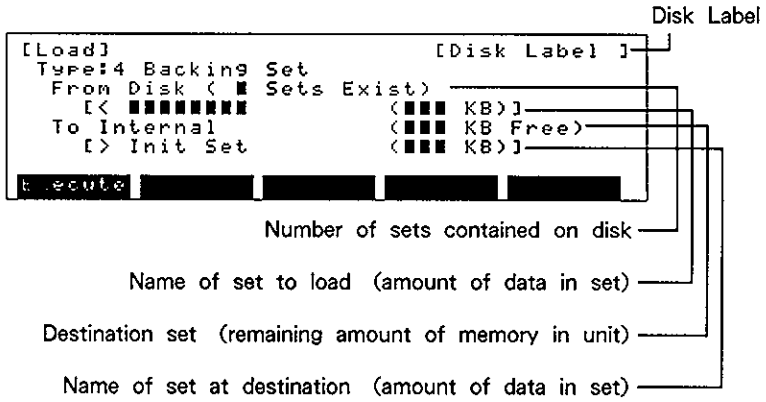
From Disk (User Tone set to be loaded)

Selects the User Tone set to be loaded.

F1 Execute — Press F1 Execute and "Are you sure ?" is displayed. To proceed with the load, press F4 YES. (To cancel, press F5 NO.)

When Type has been set to [4 Backing Set]

Employed to load a Backing set (Blocks A to J, and User Chord Change sets (U1 to U50)).


Disk Label
[Load]
[Disk Label]
Type:4 Backing Set
From Disk (■ Sets Exist)
[< ■■■■■■■■ (■■■ KB)]
To Internal (■■■ KB Free)
[> Init Set (■■■ KB)]
Execute
Number of sets contained on disk
Name of set to load (amount of data in set)
Destination set (remaining amount of memory in unit)
Name of set at destination (amount of data in set)

From Disk (Backing set to load)

Selects the Backing set to load.

F1 Execute — Press F1 Execute and "Are you sure ?" is displayed. To proceed with the load, press F4 YES. (To cancel, press F5 NO.)

*Whenever a message appears, refer to the "Message Chart" (☞ p. 6-3) and take the necessary action.

F2 Save

Saves the data contained in the unit's memory onto disk. This is referred to as the "Save" procedure.

After moving the disk's protect tab to the OFF (WRITE) position, insert it into the drive, and press F2 Save.

*All brand new disks must first be formatted for use with the JW-50 before they can be used. (☞ p. 4-52)

Type (type of data to be saved)

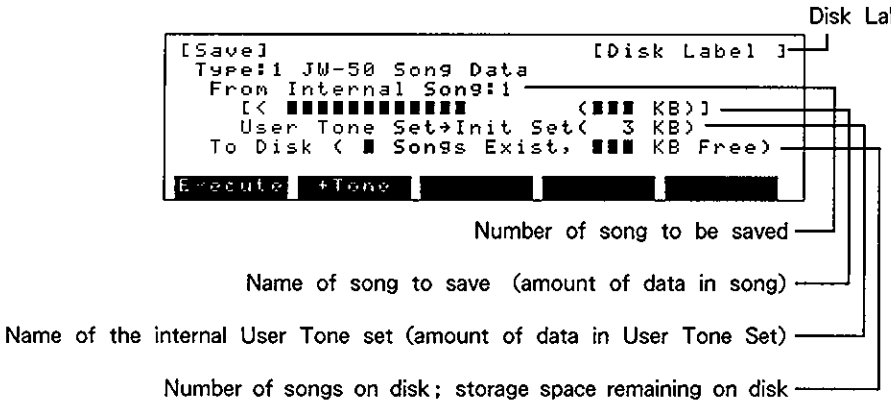
Selects the type of data you wish to save.

[1 JW-50 Song Data] : JW-50 songs
[2 SMF Song Data] : Standard MIDI File songs
[3 User Tone Set] : User Tone sets (U1 to U128)
[4 Backing Set] : Backing sets (Blocks A to J and User Chord Change Set (U1 to U50))

When Type has been set to [1. JW-50 Song Data].

Employed to save JW-50 songs.

⇨Up to 50 songs can be stored on one disk.


Disk Label
[Save] [Disk Label]
Type:1 JW-50 Song Data
From Internal Song:1
[< (KB)]
User Tone Set→Init Set(3 KB)
To Disk (Songs Exist, KB Free)
Execute +Tone
Number of song to be saved
Name of song to save (amount of data in song)
Name of the internal User Tone set (amount of data in User Tone Set)
Number of songs on disk; storage space remaining on disk

From Internal song (song to be saved) : [1] to [8]

Select the number of the song that is to be saved.

If the song does not yet have a name, only the song number will be displayed. If such is the case, give the song a name (up to 12 characters).

*A song must be given a name before it can be saved.

F1 Execute

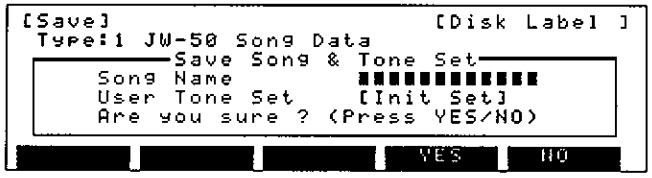
Press F1 Execute and the "Are you sure?" message will appear in the display. To proceed with the save, press F4 YES. (To cancel, press F5 NO.)

*Whenever a message appears, refer to the "Message Chart" (☞ p. 6-3) and take the necessary action.

F2 + Tone

To save the corresponding User Tone set along with the song, press F2 +Tone. When you press F2 +Tone, the screen allowing for the change of the User Tone set name appears. If you have made changes in the settings for the User Tone set, the name should also be changed. Press F4 YES, and the song data will be saved along with the User Tone Set. (To cancel, press F5 NO.)

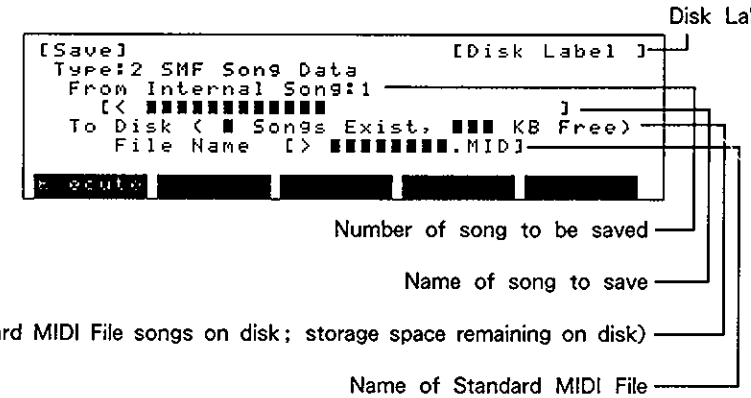
⇨Whenever a song that contains a Copyright Notice is loaded, the notice will be displayed.



When Type has been set to [2. SMF Song Data].

Saves a song as a Standard MIDI File (Format 0).

⇨Up to 99 songs can be saved on one disk.


Disk Label
[Save] [Disk Label]
Type:2 SMF Song Data
From Internal Song:1
[<]
To Disk (Songs Exist, KB Free)
File Name [> .MID]
Execute
Number of song to be saved
Name of song to save
(Number of Standard MIDI File songs on disk; storage space remaining on disk)
Name of Standard MIDI File

From Internal song (song to be saved) : [1] to [8]

Select the number of the song that is to be saved.

File Name

Applies a name to the Standard MIDI File (up to 8 characters). The ".MID" extension will be added to the end of the name. This extension cannot be altered.

*The song cannot be saved unless it is given a name.

⇨Within the file name, spaces will become an underline (_), and all lowercase letters will become capitals.

⇨If a song name already exists, the first 8 letters of it will be used to automatically create the name.

[F1] Execute

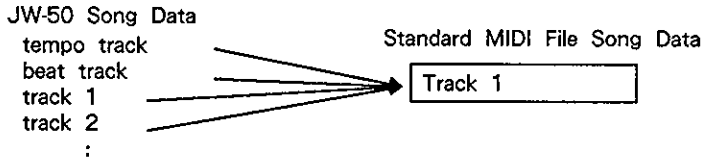
Press [F1] Execute and the "Are you sure?" message will appear in the display. To proceed with the save, press [F4] YES. (To cancel, press [F5] NO.)

*Whenever a message appears, refer to the "Message Chart" (☞ p. 6-3) and take the necessary action.

< Standard MIDI Files after conversion>

The performance data for all tracks will be placed together on track 1 in the Standard MIDI File.

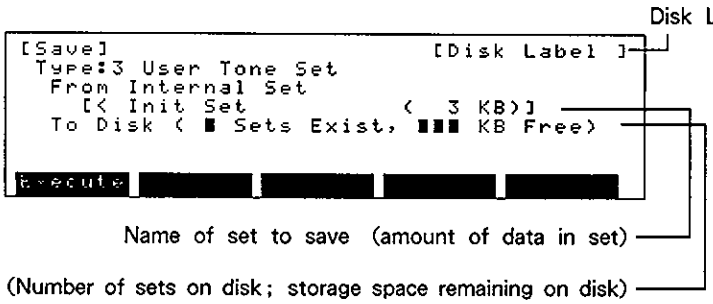
⇨Whenever a song that contains a Copyright Notice is loaded, the notice will be displayed.



When Type has been set to [3 User Tone Set]

Employed to save the unit's User Tone sets (U1 to U128).

⇨Up to 99 sets can be saved on one disk.


Disk Label
[Save]
[Disk Label]
Type:3 User Tone Set
From Internal Set
[< Init Set (3 KB)]
To Disk (■ Sets Exist, ■■■ KB Free)
Execute
Name of set to save (amount of data in set)
(Number of sets on disk; storage space remaining on disk)

From Internal Set (name of User Tone set)

If the User Tones have been altered, you must change the name of the User Tone set (using up to 8 characters).

*The set cannot be saved unless it is given a name.

[F1] Execute

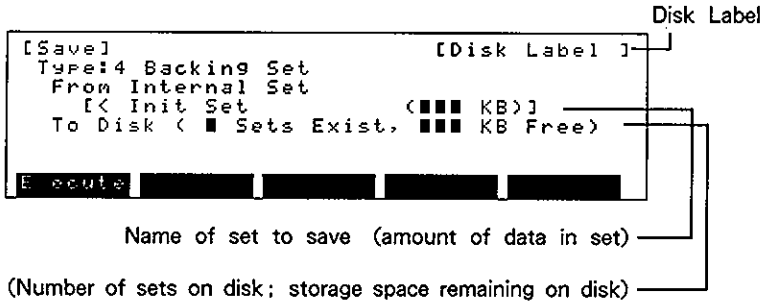
Press [F1] Execute, and the "Are you sure?" message will appear in the display. To proceed with the save, press [F4] YES. (To cancel, press [F5] NO.)

*Whenever a message appears, refer to the "Message Chart" (☞ p. 6-3) and take the necessary action.

When Type has been set to [4 Backing Set]

Employed to save the data for Backing sets (Blocks A to J and User Chord Change sets (U1 to U50)).

⇨Up to 99 sets can be saved on one disk.


Disk Label
[Save] [Disk Label]
Type:4 Backing Set
From Internal Set
[< Init Set (■■■ KB)]
To Disk (■ Sets Exist, ■■■ KB Free)
Execute
Name of set to save (amount of data in set)
(Number of sets on disk; storage space remaining on disk)

From Internal Set (name of Backing set)

Here you need to create a name for the Backing set (using up to 8 characters).

*The set cannot be saved unless it is given a name.

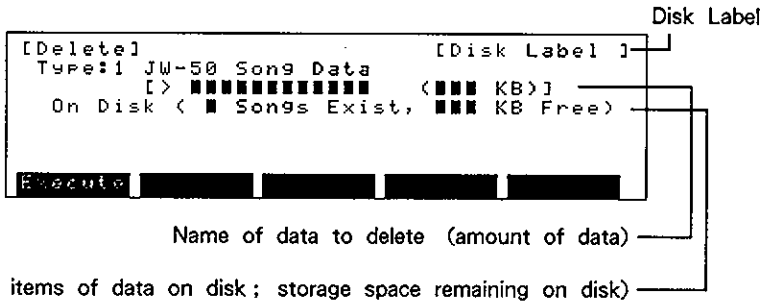
F1 Execute Press F1 Execute and the "Are you sure?" message will appear in the display. To proceed with the save, press F4 YES. (To cancel, press F5 NO.)

*Whenever a message appears, refer to the "Message Chart" (☞ p. 6-3) and take the necessary action.

F3 Delete

Used to erase (delete) unwanted data from a disk.

After moving the disk's protect tab to the OFF (WRITE) position, insert it into the drive, and press F3 Delete.


Disk Label
[Delete] [Disk Label]
Type:1 JW-50 Song Data
[> ■■■■■■■■■■■■ (■■■ KB)]
On Disk (■ Songs Exist, ■■■ KB Free)
Execute
Name of data to delete (amount of data)
(Number of items of data on disk; storage space remaining on disk)

Type (type of data to delete)

Select the type of data to delete.

[1 JW-50 Song Data]	: JW-50 songs
[2 SMF Song Data]	: Standard MIDI File songs
[3 User Tone Set]	: User Tone sets
[4 Backing Set]	: Backing sets

[>] (data to delete)

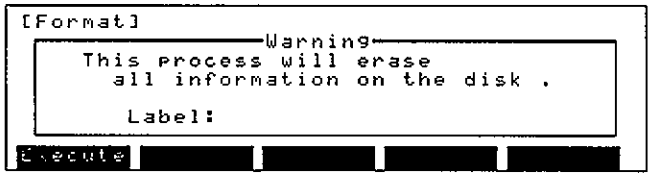
Select the data to be deleted.

F1 Execute Press F1 Execute and the "Are you sure?" message will appear in the display. To proceed with the deletion, press F4 YES. (To cancel, press F5 NO.)

F4 Format

A disk must be formatted for use with the JW-50 before data can be stored on it. This includes brand new disks and those which have been used by other equipment.
Be sure the protect tab on the disk is in the OFF (WRITE) position, and insert it into the disk drive.

*You will need to have ready a 3.5 inch, 2DD disk.
*Formatting a disk erases all data previously stored on it.



Label (Disk label)

Allows you to assign a name to the disk (up to 11 characters). Once a disk label has been created, it will be displayed in almost every screen (upper-right) within the Disk mode. This conveniently allows you to confirm which disk you currently have in the drive.

⇨The Disk label is not required. Disks can be formatted without being given a name.
*The Disk label cannot be changed afterwards.

F1 Execute

Press F1 Execute and the "Are you sure?" message will appear in the display. To proceed with formatting, press F4 YES. (To cancel, press F5 NO.)

7. TONE

Provides for the selection of the Tone used for each track, and for the creation of Original Tones.

[Tone]

Press [TONE] to select the Tone screen.

In this screen, the Tone used by each track can be selected.

⇨Track 16 can also be used as a second Drum track. (☞p. 3-1)

Track (track) : [1] to [16]

By selecting tracks, you can check the Tone used in each track.

Tone : [P1] to [P128], [U1] to [U128] (For the Drum track : [D1], [D9], [D17], [D25], [D26], [D33], [D41], [D49], [D57], [D128])

Selects the Tone (or Drum set) for each track.

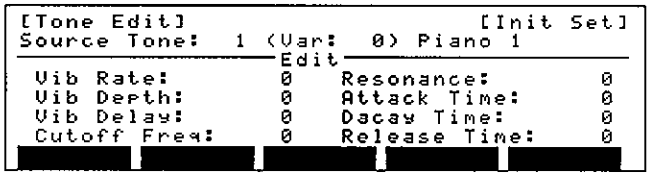
*D57 and D128 cannot be selected for Track 10.

[F1] Tone Edit

Employed to create an original Tone.

Select any track (other than the Drum track) from the Tone screen. Or, select the Tone if it is one that you wish to base your Tone on.

Press [F1] Edit to select the Tone Edit screen.



*When the Drum track is selected, the screen will not change when you press [F1].

*Any setting changes you make will be temporary: they will be lost if you switch to a different Tone. To store setting changes that have been made, you must perform the write procedure, and include them in the User Tone. (See next page.)

Source Tone : [1] to [128] (Var [0] to [127])

Provides selection of the source Tone (GS Tone). GS Tones are organized according to Tone Number and Variation Number.

*You will only be able to select numbers where a GS Tone exists.

● Vibrato

Vibrato is an effect which creates a periodic fluctuation of a sound's pitch.

⇨To enter negative values using the numeric keys, hold down [SHIFT] and press [7].

Vib Rate (Vibrato Rate) : [−50] to [+50]

Adjusts the speed at which the pitch will fluctuate.

In the plus (+) range, the speed increases.

Vib Depth (Vibrato Depth) : [−50] to [+50]

Adjusts the depth to which the pitch fluctuates.

In the plus (+) range, the fluctuations will be more pronounced.

Vib Delay (Vibrato Delay) : [−50] to [+50]

Adjusts the time it will take for the Vibrato effect to begin.

In the plus (+) range, the time is increased.

● Sound Nuance

Cutoff Freq (Cut-off frequency) : [−50] to [+16]

Adjusts the frequency at which the harmonic content of the sound will be cut-off. In general, the greater the value of a negative number, the softer the sound becomes. But this can vary depending on the particular GS Tone being used.

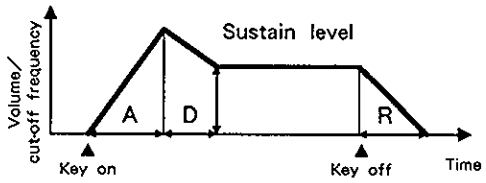
*Many of the GS Tones have much of their harmonic content left intact. For this reason, you will not notice much change when raising the cut-off frequency for such GS Tones.

Resonance : [−50] to [+50]

Adjusts the extent to which the harmonic content in the vicinity of the cut-off frequency will be emphasized. In general, the greater the value set for Resonance, the more distinctively synthesizer-like the sound becomes.

● Envelope

The envelope controls the changes that are to take place in the volume and the cut-off frequency over time.



Attack Time : [−50] to [+50]

Adjusts the time it takes for the attack (initial portion of a sound) to be heard.

Decay Time : [−50] to [+50]

Adjusts the time it takes the sound to reach the sustain level (level at which changes in volume/cut-off frequency stabilize), after the initial attack.

*With piano, guitar and other Tones which tend to decay naturally, the Decay Time can be used to serve almost the same purpose as the Release Time.

Release Time : [−50] to [+50]

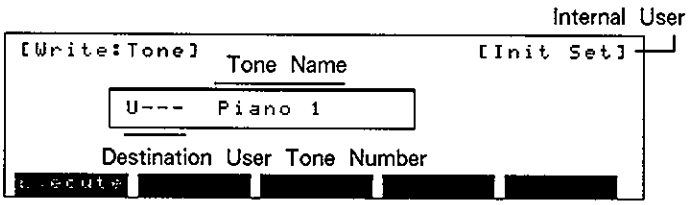
Adjusts the time it takes for the sound to decay.

WRITE (storing Tone settings)

Any setting changes you make will only be temporary: they will be lost if you switch to a different Tone. To store the settings for Tones, you must perform the write procedure and store them into the unit's memory.

Press WRITE from the Tone or Tone Edit screen to select the Write:Tone screen.

⇨To return to the screen you were in immediately before pressing WRITE, simply press EXIT.



Specify the number of the User Tone at the storage destination, and give it a name (up to 12 characters).

F1 Execute

Press F1 Execute and the "Are you sure?" message will appear in the display. To proceed, and store it in memory, press F4 YES. (To cancel, press F5 NO.) When the write operation is finished, "Completed" will appear in the display.

⇨The YES/NO selection can also be made using DEC (YES), or INC (NO).

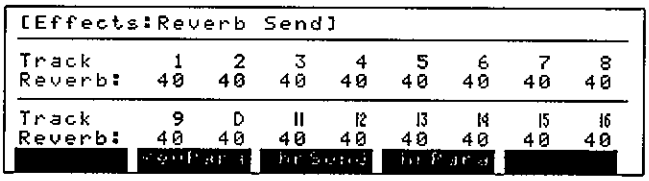
8. EFFECTS

These screens allow you to adjust the manner in which the JW-50's onboard reverb and chorus effects are to be applied.

Press [EFFECTS] to select the Reverb Send screen. The Effects mode contains 4 screens which can be selected using the function keys.

*Any changes made to effect settings are only temporary. Settings will revert to their former values if you switch to a different song, etc. To store setting changes that have been made, you must perform the write procedure with respect to each screen.

[F1] RevSend (Reverb Send Level)

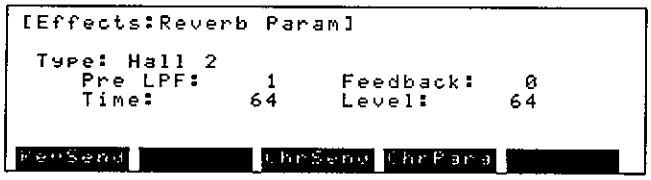


Reverb (Reverb Send Level) : [0] to [127]

Sets the extent to which reverb is applied. Setting is made on an individual track basis.

⇨The Reverb Send Level can also be set using the 8 faders.

[F2] RevPara (Reverb Parameter)



Type

Selects the reverb Type.

Type	Effect
Room 1 to 3	Simulate the reverberation in various rooms.
Hall 1 to 2	Simulate the reverberation of concert halls.
Plate	Reverb that simulates a plate echo. (A device that uses the vibrations of a metal plate to produce reverberation.)
Delay	Standard delay effect.
Panning Delay	A specialized delay which moves the sound to the extremes (left and right) in the sound field. Most effective when used in stereo.

*Once you change the Type, the other parameters revert to their default values.

Pre LPF (Pre-Low-Pass Filter) : [1] to [8]

Cuts the higher frequencies from the effect sound. The higher the value, the more the higher frequencies are attenuated (cut).

Feedback : [0] to [127]

Adjusts the number of repetitions in the effect sound.

*The Feedback setting is valid only when "Delay" or "Panning Delay" is selected.

Time : [0] to [127]

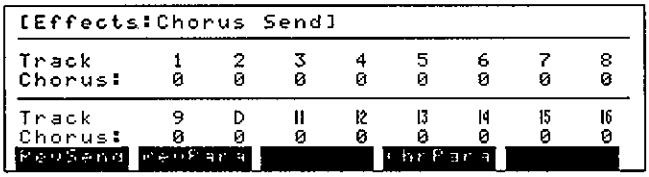
Adjusts the Reverb Time/Delay Time.

Level : [0] to [127]]

Adjusts the volume of the effect sound.

8

F3 ChrSend (Chorus Send Level)

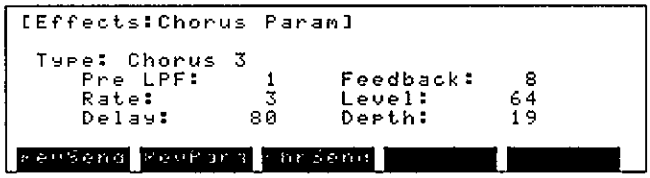


Chorus (Chorus Send Level) : [0] to [127]

Sets the extent to which chorus is applied. Set on an individual track basis.

⇨The Chorus Send Level can also be set using the 8 faders.

F4 ChrPara (Chorus Parameter)



Type

Provides selection of the chorus type.

Type	Effect
Chorus 1 to 4	Standard chorus.
Feedback Chorus	A chorus setting which also includes a flanger-like effect (the resulting sound is delicately textured).
Flanger	Produces an effect that could be likened to the sound of a jet plane's ascent and descent.
Short Delay	A delay repeated in a short time.
Short Delay (FB)	A short delay that is repeated numerous times.

*Once you change the Type, the other parameters revert to their default values.

Pre-LPF (Pre-Low-Pass Filter) : [1] to [8]

Cuts higher frequencies from the effect sound. The higher the value, the more the higher frequencies are attenuated (cut).

Feedback : [0] to [127]

Controls the amount of feedback.

Rate : [0] to [127]

Adjusts the rate of the chorus/flanger fluctuations.

Level : [0] to [127]

Adjusts the volume of the effect sound.

Delay : [0] to [127]

Adjusts the delay time of the chorus/flanger.

Depth : [0] to [127]

Adjusts the depth of the chorus/flanger effects.

WRITE (stores effect settings)

All changes in the effect settings are temporary. Settings will revert to their former values if you switch to a different song, etc. To store setting changes, and have them included as part of the song, you must perform the write procedure with respect to each screen.

Press WRITE from the Effects screen for which you wish to store changes. Press WRITE and the "Are you sure?" message will appear. To store the settings in memory, press F4 YES. (To cancel, press F5 NO.) When the write operation is finished, "Completed" will appear in the display.

⇨To return to the screen you were in immediately before pressing WRITE, simply press EXIT.

⇨The YES/NO selection can also be made using DEC (YES), or INC (NO).

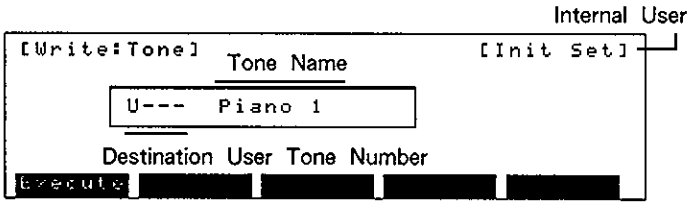
9. WRITE

The "Write" procedure is used to store settings for Tones and Chord Changes into the unit's memory, and to store changes in the settings for track parameters and effects into songs.

⇨From the Write screen you can press [EXIT] if you wish to return to the screen you were in immediately before pressing [WRITE].

【Write (Tone)】

Stores settings for a Tone you have created so it becomes a User Tone. After creating the Tone, press [WRITE] in the Tone Edit screen (or the Tone screen).



Specify the number of the User Tone at the storage destination, and give it a name (up to 12 characters).

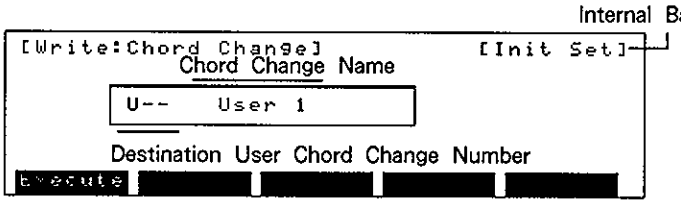
[F1] Execute

Press [F1] Execute and the "Are you sure?" message will appear in the display. To proceed, and store it in memory, press [F4] YES. (To cancel, press [F5] NO.) When the write operation is finished, "Completed" will appear in the display.

⇨The YES/NO selection can also be made using [DEC] (YES), or [INC] (NO).

【Write (Chord Change)】

Stores in memory the settings for a created Chord Change. After creating the Chord Change, press [WRITE] in the Block screen.



Specify the number of the User Chord Change at the storage destination, and give it a name (up to 12 characters).

[F1] Execute

Press [F1] Execute and the "Are you sure?" message will appear in the display. To proceed, and store it in memory, press [F4] YES. (To cancel, press [F5] NO.) When the write operation is finished, "Completed" will appear in the display.

⇨The YES/NO selection can also be made using [DEC] (YES), or [INC] (NO).

【Write (Track Parameter)】

If the following Tone parameters are changed, the changes will only be temporary. Settings will revert to their former values if you switch to a different song, etc. To store setting changes that have been made, and have them included as part of the song, you must perform the write procedure with respect to each track.

<Track parameters stored in memory>
Type, Key Shift, M/P Mode, Voice Rsv

Press [WRITE] from the track parameter screen where settings changes can be saved for the track. Press [WRITE] and the "Are you sure?" message will appear. To store the settings in memory, press [F4] YES. (To cancel, press [F5] NO.) When the write operation is finished, "Completed" will appear in the display.

*The settings for Output Assign and Tx Channel are stored automatically in a song, so you need not perform the write procedure for them.

*Since the settings for Bend Range are recorded into the track whenever the Pitch Bend Lever is used to alter the pitch, they are not stored as track parameters in the song.

⇨The YES/NO selection can also be made using [DEC] (YES), or [INC] (NO).

【Write (Effect)】

All changes made in the settings for an effect are only temporary. Settings will revert to their former values if you switch to a different song, etc. To store setting changes that have been made, and have them included as part of the song, you must perform the write procedure with respect to each screen.

Press [WRITE] from the Effects screen for which you wish to save the settings changes. Press [WRITE] and the "Are you sure?" message will appear. To store the settings in memory, press [F4] YES. (To cancel, press [F5] NO.) When the write operation is finished, "Completed" will appear in the display.

⇨The YES/NO selection can also be made using [DEC] (YES), or [INC] (NO).

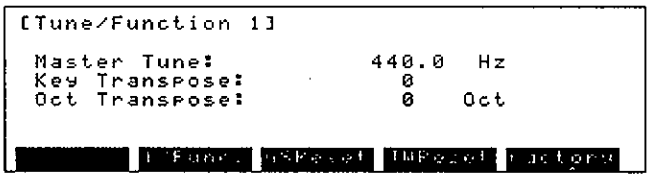
10. TUNE/FUNCTION

These screens offer settings that are made for the JW-50 system functions. They allow you to make the settings best suited for the way the instrument is to be used.

Press [TUNE/FUNC] to select the Tune/Function 1 screen. The TUNE/FUNC mode contains 2 screens which can be selected using the function keys.

⇨Settings for the TUNE/FUNC mode will be retained in memory even while the power is off.

[F1] Tune/Function 1



Master Tune : [415.3] to [440.0] to [466.2] Hz

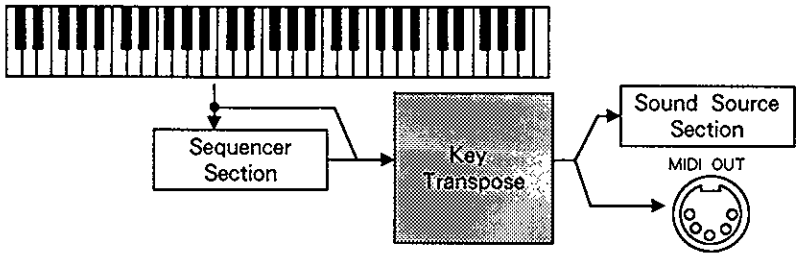
Allows you to adjust the overall pitch of the instrument. It can be used to adjust this unit's pitch so it matches that of other instruments.

⇨The value of Master Tune refers to the frequency of the A4 key.

Key Transpose : [−24] to [0] to [+24] (semitone units)

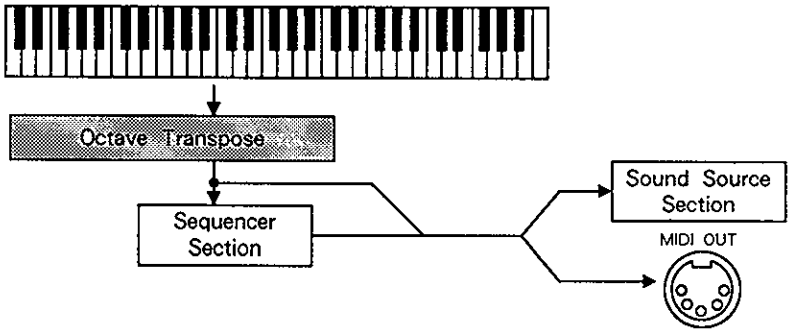
Employed to transpose both the keyboard and songs that are being played back. This setting is useful when wishing to play in another key.

*The song data itself will not be changed as a result of using Key Transpose. Also, the song data will remain unaffected even if recording is carried out while the key is transposed.

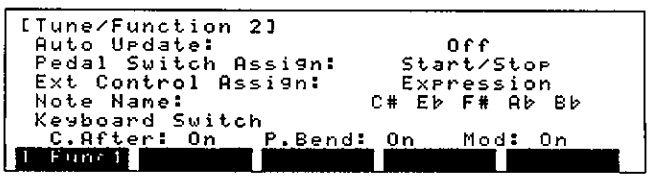


Oct Transpose (Octave Transpose) : [−2] to [0] to [+2]

Allows the keyboard's note range to be shifted by 1 octave units. Useful when you wish to play sounds that extend beyond the keyboard's normal playable range (ex., for some percussion or bass sounds).



[F2] Tune/Function 2


[Tune/Function 2]
Auto Update: Off
Pedal Switch Assign: Start/Stop
Ext Control Assign: Expression
Note Name: C# Eb F# Ab Bb
Keyboard Switch
C.After: On P.Bend: On Mod: On

Auto Update : [On], [Off]

Auto Update allows a song to be played correctly even if it is started partway through. If you do not perform the update, the wrong Tones could be heard, or they might sound in an inappropriate manner.

Ordinarily, before playback you should hold down [SHIFT] and press [STOP] to perform an update. If you want the update to take place automatically, and the song to start whenever [PLAY] is pressed, set Auto Update to [On].

*With Auto Update at [On], however, it may take a moment before the song starts after [PLAY] is pressed.

Pedal Switch Assign

Sets the function obtained from a pedal switch connected to the PEDAL SW jack.

Start/Stop : With each press of the pedal, the sequencer either starts or stops.

Punch I/O : When carrying out Punch In/Out recording, each press of the pedal will switch between Punch In or Punch Out.

*Before connecting a pedal switch, make sure it is one that activates only when the pedal is depressed. Be especially careful if you are going to use a pedal switch not made by Roland, since it could be one of those that turns on/off in the reversed order.

Ext Control Assign (External Control Assign)

Determines the type of control an expression pedal connected to the EXT CONTROL jack will provide.

Expression : Provides control over the volume of the sound played on the keyboard.

Modulation : Provides control over the modulation effect applied to notes played on the keyboard.

C. After : Provides control over the channel aftertouch effect applied to notes played on the keyboard.

*While set to [Modulation], the lever will not provide control over the modulation.

*When set to [C. After], the keyboard will not provide control over the aftertouch.

Note Name : [#], [♭]

This setting allows you to choose whether you wish to have "#" or "♭" displayed for the black keys when carrying out Step recording or using the Microscope. It can conveniently be set to conform with the key of the song being recorded.

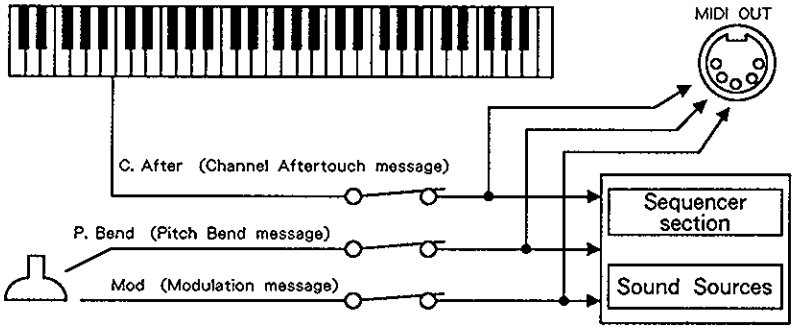
For example, for entering a piece in F major, "A#" can be set at "B ♭," making it easier to compare with the notes as printed in the notation.

⇨The Note Name setting only affects the way notes are shown in the display. It has no effect upon the data, or the way it is input.

● Keyboard Switch

The Keyboard Switch determines whether Aftertouch is to be generated by the keyboard or not; and whether or not the pitch bend/modulation effects will be produced by moving the Pitch Bend Lever.

The switch should be set to [Off] when you do not wish to record such information into the sequencer, or when you do not wish to have these effects applied to the internal sound sources or external sound generating devices.



F3 GS Reset

This procedure changes the settings for the JW-50's internal sound sources so they comply with the fundamental GS Format settings. The reset should be made when you wish to have this unit serve as a GS Format sound generator under the control of an external MIDI device.

Press F3 GS Reset and "Are you sure?" is displayed.
To carry out the procedure, press F4 YES. (To cancel, press F5 NO.) When the procedure has been carried out successfully, "Completed" will appear in the display.

⇨The YES/NO selection can also be made using DEC (YES), or INC (NO).

F4 JW Reset

Returns the JW-50's internal sound sources to their default settings. You will want to perform this procedure in the cases below:

- When you wish to return the JW-50 to its basic, native settings after you have performed a GS Reset.
- When the settings for the internal sound sources have been altered as a result of playing song data geared for the GS Format, such as SMF Music Data (available separately).

Press F4 JW Reset and "Are you sure?" is displayed.
To carry out the procedure, press F4 YES. (To cancel, press F5 NO.) When the procedure has been carried out successfully, "Completed" will appear in the display.

F5 Factory

Returns the JW-50 to its factory default settings. When this procedure is carried out, all settings you have made will be lost. If the unit contains any important data, you must make a copy of it on disk before you perform this procedure. Note that you will also need to write down in a notebook the settings for Tune/Function, MIDI, and Metronome, if you believe you may need to restore your settings for these afterwards.

All of the items listed below will be returned to their factory default settings.

User Tone
Block
User Chord Change
Tune/ Function
MIDI
Metronome

Press F5 Factory and "Are you sure?" is displayed.
To carry out the procedure, press F4 YES. (To cancel, press F5 NO.)

11. MIDI

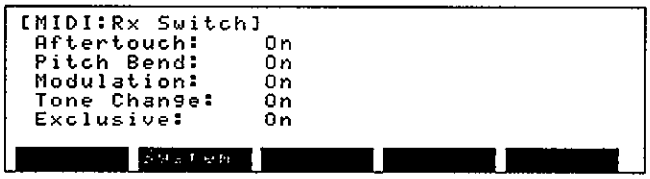
These screens provide settings which determine things such as how MIDI messages will be transmitted/received, and how the unit is to synchronize with an external sequencer.

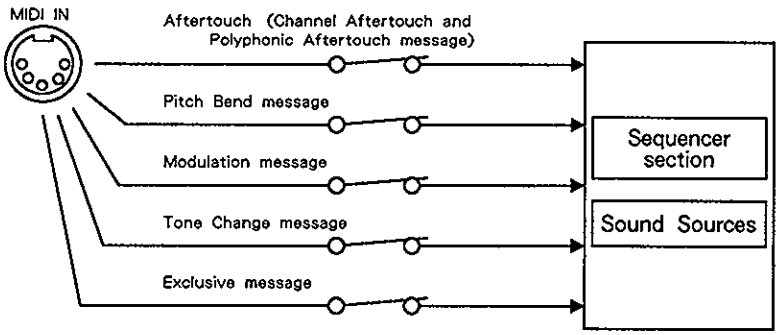
Press [MIDI] to select the Rx Switch screen. The MIDI mode contains two screens which can be selected using the function keys.

⇨Settings for the MIDI mode will be retained in memory even while the power is off.

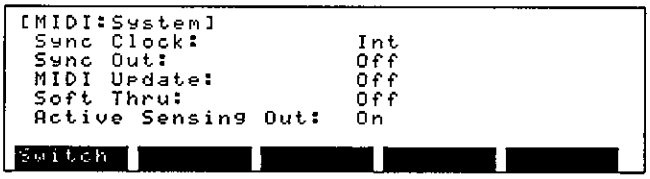
[F1] MIDI : Rx Switch

Selects whether or not MIDI messages will be received from an external MIDI sound generator. If you do not wish to receive MIDI messages, set it to [Off].





[F2] MIDI : System



Sync Clock

Sets the method in which the internal sequencer's clock is to be treated. Ordinarily it is set to [Int].

[Int] : The internal sequencer remains synchronized to its own internal clock. The MIDI clock arriving from an external sequencer will be ignored. This setting is made when the JW-50 is to be the master during synchronized play.

[Slave] : The internal sequencer syncs to the MIDI clock arriving from an external sequencer. The internal sequencer will not operate until it receives the MIDI clock signals from the external sequencer. Selected when an external sequencer is to be the master to which this unit syncs when playing.

[Remote] : Start/Stop messages from the external MIDI device will be used to control the Start/Stop of the internal sequencer. In this case, the internal sequencer remains synchronized to the internal clock, and the MIDI clock arriving from an external sequencer will be ignored.

Sync Out : [On], [Off]

Selects whether or not the following Real-Time messages are to be transmitted. It should be set to [On] if you wish to control an external sequencer by means of panel operations performed on the JW-50's sequencer.

MIDI Clock/Start/Continue/ Stop/Song Position Pointer/ Song Select

MIDI Update : [On], [Off]

This setting is useful when an external sequencer is the master to which this unit is synchronized. When the external sequencer has changed the position from which the song is to play, messages which describe the move (Song Position Pointer) are transmitted to the JW-50, causing the JW-50 to move to the identical position. At this time, if MIDI Updata is [ON], the JW-50 will send to the internal sound sources the MIDI data (except note data) for the portions of the song that span from the beginning to the position which was moved to, and make the settings which match the position that is to be played.

Quite simply, with MIDI Update [On], songs will be played correctly even when playback is started from somewhere partway through.

*The MIDI Update function will require some time to perform its processing, depending on the position of the update and the type of song data. During the update, "Now Working" will be displayed. You must wait until the message disappears before playing back the song.

Soft Thru : [On], [Off]

When set to [On], all MIDI data arriving at the MIDI IN connector will be output from the MIDI OUT connector.

Although this is ordinarily set to [Off], it should be set to [On] when using only the JW-50's sequencer section.

Active Sensing Out : [On], [Off]

Active Sensing messages monitor the integrity of MIDI connections. This screen allows you to turn ON/OFF transmission of Active Sensing messages.

Note that certain devices may be incapable of correctly processing Active Sensing Messages, and as a result, sound may not be produced. Should this occur, turn Active Sensing transmission [Off].

12. CHAIN LOAD

Chain Load is a feature which allows you to have a number of songs on a single disk loaded and played in the order you determine. The settings for Chain Load can be saved onto the disk.
This conveniently allows you to set up a group of songs beforehand for a stage performance, and then simply press [PLAY] to have them played in the proper order. This simplifies live performances considerably.

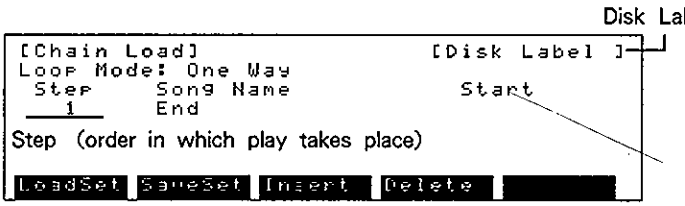
*Standard MIDI File songs cannot be chain loaded.

*Synchronized play cannot be carried out while the Chain Load feature is employed.

[Chain Load]

First, insert the disk that contains the songs to be Chain Loaded.
Then, press [CHAIN LOAD] to select the Chain Load screen.

⇨If the disk already contains Chain Load settings, they will be loaded automatically when you switch to the Chain Load screen.



Loop Mode

This setting determines the action that is to be taken once the songs have all been played.

[One Way] : The unit stops after one pass.
[Repeat] : The first song is loaded again. This setting is made if you want the songs set for Chain Load to be repeated a number of times.

Song Name (selection of the song)

Move the cursor to "End" and select the song using the Dial. Press [ENTER] and the selected song is entered into the chain, and you can then select the next song. If you wish to make changes after the list is complete, simply move the cursor to the name of the song you wish to change, and make a new selection.

⇨A maximum of 50 songs can be selected for the list.

Start

This setting determines whether you want the songs to start automatically or not after they are loaded.

[Auto] : Start automatically.
[Manual] : Start when [PLAY] is pressed.

When songs are first selected, [Auto] will appear as the mode. If this is satisfactory, press [ENTER]. To select [Manual], move the cursor there, and after changing the setting, press [ENTER]. If you wish to make changes after the list is complete, move the cursor to "Start" for the Step in question, and make the change.

[F1] Load Set

Loads the Chain Load settings contained on a disk
Press [F1] and "Are you sure ?" is displayed. To proceed with the load, press [F4] YES. (To cancel, press [F5] NO.)

⇨The YES/NO selection can also be made using [DEC] (YES), or [INC] (NO).

[F2] Save Set

Saves the current Chain Load settings onto disk.
Press [F2] and "Are you sure ?" is displayed. To proceed with the save, press [F4] YES. (To cancel, press [F5] NO.)

*Only one set of settings for Chain Load can be saved onto any particular disk. If settings have already been saved on a disk, they will be replaced when you save a new set.

[F3] Insert

Inserts a song at the step where the cursor is located.
The Song that is inserted will be identical to the one at the Step where the cursor is located. If you wish some other song to be located there, it should be changed after the insertion.

[F4] Delete

Erases the song at the cursor position.

<Carrying out Chain Loading>

① Move the cursor to the line where Step 1 is located and press [PLAY].
If "Start" for this song is set to [Auto], the song data will be loaded, and will play automatically.
If "Start" for the song is set to [Manual], the song data will be loaded. Press [PLAY] again and playback will begin.

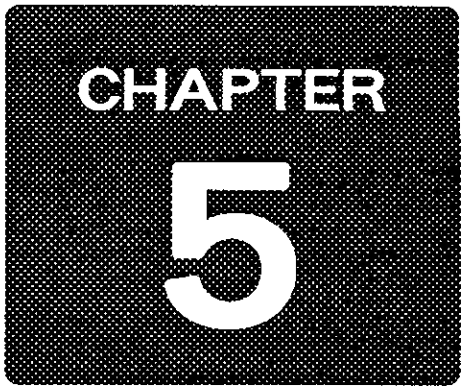
*If "Out of memory" appears in the display, it means that the unit does not have enough memory available to proceed with your request. You must first erase any unneeded data before you can proceed.

- When playback of the song finishes, the song at the next Step will be loaded.
- To stop partway through, press [STOP]. Press [PLAY] and the song will start from the beginning.
- When stopped, and you wish to play one of the songs at a Step somewhere in the middle, move the cursor to the line where that Step is located and press [PLAY].
- Press [▶▶] (FWD) during playback to stop playback of that song and load the next song.
- Press [◀◀] (BWD) during playback and you are returned to the beginning of the song.

<Precautions>

- Chain Loading can only be performed from the Chain Load screen.
- If you switch from the Chain Load screen to some other screen, the song data selected for the Chain Load will be lost. Note that the settings for Chain Load will remain in memory until the power is turned off.
- If the songs that are being Chain Loaded use a User Tone set that is different than the unit's User Tone set, unexpected Tones may be heard. In such cases, the Tones recorded in the song must first be converted to Tones that comply with the GS Format. (☞p. 3-27, p. 4-37)

⇨If the song does not use any User Tones, no conversion will be necessary, even if the User Tone set is different.



GLOSSARY

A

● Active Sensing Messages MIDI

When an external MIDI device is connected to MIDI OUT, these messages are transmitted in order to monitor the integrity of the MIDI connections. These messages check for things such as disconnected or damaged cables.

Note that certain devices may produce errors as a result of receiving Active Sensing Messages. Should this occur, you will need to turn off transmission of these messages. (☞ p. 4-64)

● Aftertouch MIDI

Aftertouch is a performance technique whereby pressure is applied to notes on a keyboard that have already been played. Depending on the instrument, a number of different effects can be created. On the JW-50, Aftertouch controls the brilliance of a sound.

There are two types of Aftertouch; Channel Aftertouch (or Channel Pressure) and Polyphonic Aftertouch (or Polyphonic Key Pressure). The keyboard on the JW-50 provides Channel Aftertouch.

** If the instrument is set to comply with the fundamental GS Format settings, neither type of Aftertouch can be obtained.*

B

● Backing Feature BACKING

This feature facilitates the easy, convenient creation of accompaniment for songs. For each Block, 4 measures of accompaniment are created. These Blocks are then combined and recorded into the sequencer.

● Bank Select Messages MIDI

These messages, in combination with Program Change messages, are used to select Tones. Bank Select Messages employ Control Change numbers 0 and 32.

The value for Control No. 0 is referred to as the GS Bank Number on the JW-50. The value for Control No. 32 will always be 0.

● Block BACKING

A Block is 4 measures of accompaniment created using the Backing Feature. Blocks are created by selecting the Music Style that most closely resembles the song you have in mind, and making your choice of settings for chord progressions. A total of ten blocks (A to J) can be created.

C

● Capital Tones TONE

The 128 Tones that form the fundamental set defined by the GS Format. On the JW-50, Variation No. 0 of the GS Tone is the Capital Tone.

● Chain Load SONG

A feature which allows you to specify a selection of songs on disk that you wish to load and play in a certain order. The feature is most convenient when performing live. The settings for such "Chain Loading" can be saved onto disk.

● Channel Aftertouch (Channel Pressure) MIDI

With Channel Aftertouch the same level of effect is obtained for all the keys pressed, regardless of the amount of pressure used. The keyboard on the JW-50 generates Channel Aftertouch information.

● Channel Messages MIDI

These MIDI messages belong to a group which are separately handled on each of the MIDI channels. Almost all messages related to events in a performance belong to this group.

● Checksum MIDI

The Checksum is a value which is used to confirm that Exclusive data has been received correctly. It is inserted immediately before the value F7H (end of exclusive). Since specific implementations of Exclusive data vary considerably depending on the manufacturer, the calculation must be performed in a way that matches the format used by a particular manufacturer. On the JW-50, the checksum is calculated automatically only with respect to Roland Exclusive messages (Type IV).

● Chord Change BACKING

A chord progression consisting of 4 measures used in creating Blocks. There are two types of Chord Changes; Preset Chord Changes (P1 to P30), and User Chord Changes (U1 to U50).

For each of the Preset Chord Changes there are a number of types: Original, Variation 1, and Variation 2. In the Preset Chord Changes, for a Music Style sharing the same number, Chord Changes which best match that type of music have been provided. The User Chord Changes allow you to store whatever chord progressions you create.

● Chorus EFFECTS

Chorus is an effect which results in sounds that are perceived as being warmer and fatter. Eight types are provided, including those offering a flanging or short delay effect. Although the Chorus settings affect all tracks, the extent to which they will be applied (Chorus Send Level) can be set separately for each track.
Note that any setting changes are temporary. Settings will revert to their former values if you switch to a different song, etc. If you wish to keep your changes as part of the song, you should perform a "Write" operation before leaving each screen in which you have made settings.

● Clock SONG

The fundamental signal which manages the timing the sequencer follows. The clock pulses represent the smallest unit of timing the sequencer is capable of recognizing when recording. On the JW-50, there are 120 clock pulses per quarter note.
When using MIDI, a separate MIDI clock is used in order to synchronize with an external device, such as a sequencer. Under the MIDI clock, there are 24 clock pulses per quarter note.

● Continue Message MIDI

This MIDI message is sent out when a song is started after having been paused. The message becomes essential when another sequencer is being played in sync with this instrument.

● Control Change Messages MIDI

Control Changes are messages used to control a variety of extra features which can affect the way sound will be produced. Each of such controls is identified by a Control Number. In some cases, a single control can use a combination of Control Numbers to accomplish its purpose.
Within the GS Format, all controls are standardized.

● Copyright Notice SONG

Every Roland SMF Music Data disk, as well as certain other commercially available disks, contain comments such as those concerning the person(s) who composed the music, etc. Such comments are referred to as the "Copyright Notice." This Copyright Notice can be viewed by displaying the Song Information screen (☞ p. 4-4). In addition, this message will be displayed as a reminder of the copyright ownership when editing such songs, or when transferring such data to and from disks.

● Cutoff Frequency TONE

One of the Tone parameters, this is a setting which allows you to adjust the frequency at which the sound's harmonic portions will be cut. Generally, if set to a value lower than 0 the sound will become more subdued.

D

● Device ID Number MIDI

The Device ID Number identifies individual units when several identical units are connected. This assures that the transmission/reception of Exclusive messages will take place reliably. The Device ID Number of the JW-50 is "17," which conforms to the standard settings defined by the GS Format.

● Disk Label DISK

This is the name given to a disk. Once the Disk Label has been created, it will be displayed (at upper right) within almost every screen in the Disk mode. This allows you to conveniently see which disk you are currently working on.

● Drum Sets TONE

These are sets of percussive sounds which are used within the Drum Track. With Drum Sets you obtain a different sound for each key on the keyboard. The JW-50 provides 10 onboard Drum Sets.
For track 10 you can select from 8 of the 10 sets. When you want to use the other 2 sets (SFX and CM-64/32), you must first change track 16 to a Drum Track, then select SFX or CM-64/32.

● Drum Track SONG

The track specialized for playing Drums. The Drum Track is set at track number 10. On the JW-50, track 16 can also be used as a second Drum Track (☞ p. 3-1).

E

● Effects EFFECTS

The JW-50 is equipped with onboard Reverb and Chorus effects. The settings for these effects apply to all tracks. However, the extent to which they will be applied (Send Level) can be set separately for each track.
Note that any setting changes are temporary. Settings will revert to their former values if you switch to a different song, etc. If you wish to keep your changes as part of the song, you should carry out a "Write" operation before leaving each screen you have worked in.

● Envelope TONE

The Envelope controls the changes that take place in the sound from the moment the key is pressed until the sound decays. On the JW-50, the Envelope is adjusted using the Attack/Decay/Release parameters.

● Exclusive Messages MIDI

Exclusive messages are designed to convey information that is unique to a certain device, the most obvious being data concerned with its specific collection of sounds. The format used for Exclusive messages has been devised separately by each manufacturer. Even among products produced by the same manufacturer, the actual content that this type of data will carry can vary considerably. For this reason, it is safe to assume that this type of data cannot be exchanged between devices unless they are both the same model. The JW-50, however, is also capable of exchanging Exclusive Messages that are in the GS Format.
The JW-50's Device ID Number is "17," which conforms to the standard settings defined by the GS Format. This number cannot be changed.

● Expression MIDI

Expression is a feature which allows for control of volume or modulation during performances. Volume or modulation is controlled by means of an expression pedal connected to the EXPRESSION jack.

F

● Floppy Disks DISK

The JW-50 is designed to use 3.5 inch micro-floppy disks (2DD). The disks are used to save and store Song data, User Tones, as well as information related to Chain Loading.

● Format (Disk) DISK

A disk must be formatted for use with the JW-50 before it can be used. This applies to all new disks, and any disk which has previously been formatted by another piece of equipment (☞ p. 3-46).

● Function Keys

The row of 5 keys at the lower part of the display. The action obtained by pressing them will vary depending on the screen you are in at that moment.

G

● Gate Time REC

The amount of time between the moment a key is pressed and the moment it is released. It can be viewed when in Step Recording or using the Microscope function. The Gate Time is expressed as a number of clock pulses.

● GM System(General MIDI System) MIDI

The General MIDI System is a universal group of specifications for sound generating devices which has been agreed upon by both the Japan MIDI Standards Committee and the American MMA (MIDI Manufacturer's Association). These specifications seek to make it easier to create music data which will be compatible with a much larger range of devices, and will not be limited to equipment by a particular manufacturer or to specific models. As a result, any equipment that is equipped with sound sources which support the General MIDI System will be able to reproduce General MIDI Scores (music data created specifically for devices supporting the General MIDI System), regardless of the make or model.

● GS Bank Number MIDI

☞ "Bank Select Messages" (p. 5-1)

● GS Format MIDI

The GS Format is a format for sound generating devices that has been developed by Roland. While completely satisfying all the specifications set down for the General MIDI System, this format also provides for the selection of a much larger number of sounds, and defines many of the finer details for other expressive features that can be applied during performance.
Thanks to this format, any product that is equipped with GS sound sources will faithfully reproduce music data that was created under the GS Format, regardless of the particular model used.
Any product which conforms to the GS Format will carry both the "GS" and "GM" logos, which means that it allows for the use of both GS music data and General MIDI Scores.

● GS Tone MIDI

These Tones are designed to behave in conformity with the GS Format. They are used for creating User Tones, or for the accompaniment produced with the Backing feature.

H

● Hold (Hold 1) MIDI

Hold is an effect that causes notes to be sustained for as long as you depress a footswitch (that has been connected to the HOLD jack).

** Note that even with the Hold effect turned ON and keys pressed, no change in duration will be obtained if the selected Tone is one which normally needs to decay rapidly (a percussive sound for example).*

L

● Load DISK

This is the process whereby data on disk is copied into the instrument's memory.

● Locate Function SONG

This function allows you to specify points at any location within songs. Up to 10 of these points, known as "Locate Points," can be set. Afterwards, these points can conveniently be used as follows:

ⓐ To mark punch-in and punch-out points when using Auto Punch In/Out recording.

ⓑ As a marker anywhere in a song from which a return to the song's beginning can be made.

ⓒ To mark off a section which, in combination with the Looping function, can then be repeated any number of times for play or recording.

● Looping Function SONG

A function which allows a specified section to be repeated any desired number of times, for the purposes of recording or playback.

M

● Metronome REC

The metronome can be turned on as a guide to the proper timing for playing the keyboard when recording in Real-Time.

● Microscope REC

The Microscope screen allows you to view every single MIDI event that has been recorded in a song. Any of these events can be edited or erased. New events can also be added.

● MIDI MIDI

MIDI stands for "Musical Instrument Digital Interface." It is an international standard that allows for data, such as that representing the actual music played by an instrument, or that describing whatever changes took place in the sounds being used, to be exchanged among various instruments. As long as they are MIDI compatible, all devices, regardless of differences in model or manufacturer, can exchange whatever performance data they are mutually equipped to understand.

● MIDI Channels MIDI

MIDI Channels are in a sense simply numbers which serve to distinguish one device from another when an exchange of performance information is carried out.

The channels available using MIDI range from 1 to 16. When the receiver is set so the channel it uses matches the MIDI channel used by the transmitting device, the MIDI data will be conveyed successfully.

On the JW-50, each of the tracks from 1 to 16 uses its own MIDI Channel. In other words, each track is treated as if it were a separate sound generating unit. The number of the MIDI channel (on which each track will receive data) is the same as the track number. The channel numbers on which transmission takes place can be set to match your particular configuration (☞ p. 3-41, p. 4-3).

● MIDI Clock (Timing Clock Messages) MIDI

☞ "Clock" (p. 5-2)

● MIDI Connectors MIDI

The connectors through which MIDI message is communicated. The 3 types of connectors below are provided. Only cables specially designed for MIDI should be connected to them.

MIDI IN : Receives MIDI message.
MIDI OUT : Transmits MIDI message.
MIDI THRU : Passes on an exact copy of message received at MIDI IN.

● MIDI Events MIDI

The individual, detailed pieces of data that are recorded into a song.

● MIDI Status MIDI

Identifier (as in MIDI data, the status byte); or in other words, the name of a specific type of MIDI message.

● Mix Recording REC

A type of Real-Time recording whereby information being recorded is layered on top of the performance data that was previously recorded.

● Mixer MIXER

In the Mixer mode, the 8 faders are available for control of the Volume/Pan setting for any of the tracks. Also, the settings for Volume/Pan can be recorded at whatever position required. In addition, recording can be carried out during playback.

● Modulation MIDI

The vibrato effect obtained when the pitch bend lever is pushed forward. Modulation information is conveyed using Control Change No. 1 messages.

● Multi-Recording REC

A method of recording whereby song data originally created on an external sequencer is arranged into its completed form on the JW-50's sequencer (☞ p. 4-8, p. 3-44).

● Music Styles BACKING

Music Styles provide a collection of essential musical elements, such as rhythm, timbre, and accompaniment, from a wide range of musical styles. The Music Styles rely on these four instrument parts: Instrument 1/Instrument 2/Bass/Drums. They provide the source material used when preparing Blocks for accompaniment. There are 30 Music Styles provided, and each is capable of three playing patterns: Original, Variation 1, and Variation 2.

● Mute SONG

This feature allows you to mute selected tracks. To specify the tracks in a song that you do not wish to hear, first select the sequencer's basic screen.
Also, from the Block screen you can specify individual instruments performing backing that you do not wish to hear.

N

● Note Name REC

The name corresponding to a specific key on a keyboard. For example, on an acoustic piano, middle C is referred to as "C4." The #/ ♭ for the black keys displayed when using Step recording or the Microscope can be selected to conform to the key of the song being recorded (☞ p. 4-61).

● Note Number MIDI

The number that specifies the specific location of a key on a MIDI keyboard. For example, middle C (C4) is assigned the number "60." These numbers range from 0 (C-1) to 127 (G9).

● NRPN (Non-Registered Parameter Number) MIDI

A type of Control Change message which allows for the control of certain unique parameters that a device may have. These messages rely on combinations of more than one Control Number.
On the JW-50 they are used for 13 types of parameters, including vibrato and envelopes. The control functions provided by NRPNs are defined by the GS Format. Any settings related to these controls can easily be entered into song data using the Microscope feature.

P

● Pan MIDI

The Pan function allows you to determine the localization of the sound image, obtained when using a stereo output. In the Mixer mode, the Pan setting can be recorded at any desired location in a song. This setting can also be recorded during playback.

● Parameter

A parameter is the generic term used when referring to any one of the individual items for which a setting can be made on the JW-50.

● Pitch Bend Change Messages MIDI

These MIDI messages are transmitted whenever you change the pitch using the Pitch Bend Lever. The actual amount of change in the pitch (Pitch Bend Range) can be set individually for each track (☞ p. 3-2).
The JW-50 records the amount of pitch change, and the settings for the Pitch Bend Range that is in effect at that time for each track as part of a song.

● Polyphonic Aftertouch (Polyphonic Key Pressure) MIDI

With Polyphonic Aftertouch the level of effect is generated independently for each key pressed (the greater the pressure, the more pronounced the effect). With the JW-50's default settings, Polyphonic Aftertouch is not supported.

● Portamento MIDI

Portamento is an effect which provides a smooth transition in pitch between two keys (one pressed after the other). Portamento can easily be entered into song data using the Microscope feature.

● Preset Tones TONE

These are the JW-50's 128 fundamental Tones. The Preset Tones can be thought of as being GS Tones into which the settings for the Tone Parameters have been combined. They are arranged in the same manner as Capital Tones. No changes can be made in the settings for these Tones. The GS Bank Number for Preset Tones is "80."

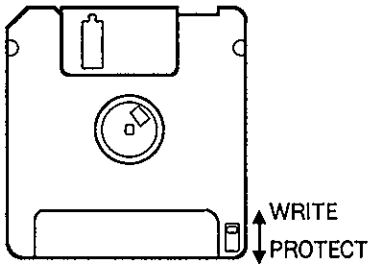
● Program Change Messages MIDI

These MIDI messages relay instructions about changes in the Tones (or Drum Sets) that are to be used. To select Tones, they need to be used in combination with Bank Select messages. The Program Number for a Tone corresponds numerically to the Tone Number. The Program Number for Drum Set also corresponds numerically to the Drum Set Number.

** Note that the GS Bank Number must be set to "0" in order to be able to select Drum Sets.*

● Protect Tab DISK

The 'switch' on a floppy disk which allows you to protect the data stored on the disk from being accidentally erased or changed. Ordinarily, you should keep the tab at the ON (PROTECT) position. When you need to save data onto the disk, move the tab to the OFF (WRITE) position.



● Punch In/Out Recording REC

This is one type of Real-Time recording. While performance data which has already been recorded is played back, a specified portion of it is recorded over again.

The point at which the recording is started is called the "Punch In" point, while the "Punch Out" point is where recording ends. In Punch In/Out recording, there are a number of methods available. You can either target the re-record region beforehand (Auto), press [REC] at the appropriate time, or step on a pedal setup for that purpose (Manual).

Q

● Quantize REC

Quantization corrects the timing inaccuracies that may have occurred during recording of the notes (Note events).

The setting for Quantization is made when carrying out Real-Time recording. Additionally, since it is also available in the Song Edit mode, songs can be quantized after they are recorded as well.

** Note that quantization will only adjust the timing of Note events. For this reason, you should avoid quantizing data which contains other kinds of MIDI events, since this could produce undesired results.*

R

● Real-Time Recording REC

A method of recording where the music actually played on the keyboard is recorded. There are 4 types of Real-Time recording:

ⓐ Replace Recording
ⓑ Mix Recording
ⓒ Manual Punch In/Out Recording
ⓓ Auto Punch In/Out Recording

● Recording REC

The process of entering music into the sequencer, where it is stored and awaits playback. In broad terms, there are 3 types of recording:

ⓐ Real-Time Recording
ⓑ Step Recording
ⓒ Recording which uses the Backing feature

● Replace Recording REC

This is one type of Real-Time recording. Any performance data already contained within the specified track will be erased, then replaced with the new data being played.

● Resonance TONE

Resonance is a Tone parameter which allows you to control the amount of emphasis that will be placed on the harmonics in the vicinity of the cutoff frequency. In practical terms, this means that the greater a value you choose for Resonance, the more distinctively electronic the sound becomes.

● Reverb EFFECTS

Reverb (Reverberation) is an effect which adds spaciousness to sounds. Eight types are provided, including those offering a delay or panning delay effect. Although the Reverb settings affect all tracks, the extent to which they will be applied (Reverb Send Level) can be set separately for each track.

Note that any setting changes are temporary. Settings will revert to their former values if you switch to a different song, etc. If you wish to keep your changes as part of the song, you should perform a "Write" operation before leaving each screen in which you have made settings.

● RPN (Registered Parameter Number) MIDI

A type of Control Change message that relies on combinations of more than one Control Number. They provide control over the functions defined by the MIDI standard. Any settings related to these controls can easily be entered into song data using the Microscope feature.

S

● Save DISK

The process of transferring data contained in the instrument's memory onto floppy disks.

● Sequencer

A sequencer is a device which can record the digital information created when a MIDI instrument is played. This method of recording provides numerous advantages over a conventional tape recorder, since no deterioration in the signal occurs, unlimited numbers of precision edits can be made, and the music does not change in pitch even if the tempo is changed.

● Soft MIDI

This is a function which provides the effect obtained from the soft pedal on a piano. When turned ON, notes will become subdued. The setting can easily be entered into song data using the Microscope feature.

● Soft Thru MIDI

When Soft Thru is turned ON, data received at MIDI IN will also be sent from MIDI OUT. It should be turned ON when carrying out recording/playback while you have an external keyboard and sound module connected (☞ p. 4-64).

● Song Data SONG

Song Data consists of performance data for the tracks, the song name, the settings for the tracks, and other data (☞ p. 2-4).
Note that any setting changes for the Track Parameters (except for a few) and effects must be stored (via a "Write" operation) or they will revert to their original values.

● Song Position Pointer Messages MIDI

A type of MIDI message that indicates the current position within the song. These messages are used when synchronizing play with another external sequencer.

● Song Select Messages MIDI

This type of MIDI message is transmitted whenever a different song is selected. These messages are used when synchronizing play with another external sequencer.

● Sostenuto MIDI

This is a function which provides the effect obtained from the sostenuto pedal on a piano. While turned ON, notes will be sustained after they have been released. The setting can easily be entered into song data using the Microscope feature.

● Standard MIDI Files SONG

Standard MIDI Files consist of song data that has been saved in a standardized format designed to bridge the incompatibilities that exist between different manufacturers. Before playing Standard MIDI Files on the JW-50, they must be converted to JW-50 song data. Going the other way, you can also convert JW-50 song data to Standard MIDI Files (Format 0).

● Start Message MIDI

This MIDI message is sent out when [PLAY] is pressed to start a song from the beginning. This message is important when another sequencer is being played in sync with this instrument.

● Step Recording REC

A method of recording where the music is entered note by note. It is convenient to use for recording phrases that you feel might be difficult to play on the keyboard, or to record in a manner that assures precise timing.

● Step Time REC

The setting which determines the time between one note and the next. It needs to be set when entering notes individually using Step Recording. The Step Time is expressed in clock pulses.

● Stop Message MIDI

This MIDI message is sent out when [STOP] is pressed. This message is important when another sequencer is being played in sync with this instrument.

● Sync Clock MIDI

This is a parameter which determines the type of synchronization to be used when syncing with an external sequencer. If the external sequencer is being required to sync with the JW-50, set it to [Int]. If the JW-50 is expected to sync to the external sequencer, set it to [Slave]. Additionally, it can be set to [Remote] if you wish the external sequencer to control only the Start/Stop operations.

● Synchronized Play MIDI

Play of a song can be synchronized so an external sequencer plays a JW-50 song at the same time. The JW-50 allows such synchronized play to be controlled using MIDI. The MIDI clock provides the timing that is used.
Generally, the device that is sending out the MIDI clock timing and requesting the other unit to sync to it is referred to as the "master," while the other unit is known as the "slave." The Sync Clock parameter determines the type of synchronization the JW-50 will use (☞ p. 4-63).

● System Messages MIDI

System messages form a group which are handled by the entire system, independent of individual MIDI channels. These messages are required equally by all devices capable of being connected by MIDI. They belong to one of these 3 major categories: Common, Real-Time, or Exclusive.

T

● Tempo SONG

This is a setting which allows the speed at which a song will play to be adjusted. The indication "♩ = 120" means that a quarter note will occur 120 times a minute.

● Tempo Track SONG

The Tempo Track is the track which records changes in the tempo if you change the tempo during the course of a song. The Tempo Track records only the change that took place relative to the set tempo. Thus, the tempo for everything in the song will change if you change the current tempo for the song after it has been recorded.

● Tone TONE

There are Preset Tones and User Tones that can be selected for use in performance. In addition, there are also GS Tones, which perform in conformity with the GS Format. GS Tones are used for creating User Tones, or with the accompaniment produced with the Backing feature.

● Tracks 1 to 16 SONG

Each of the tracks from 1 to 16 is capable of recording performance data from a single MIDI channel. The number of the MIDI channel (on which each track will receive data) is the same as the track number. The numbers of the channels on which transmission will take place, however, can be individually set.

U

● Undo SONG EDIT

This feature allows you to undo whatever operation you have just executed in the Song Edit mode. It can be conveniently used whenever the result you obtain is not quite what was expected. To return to the state you were in before the edit, simply press [F5] Undo.

** Note, however, that you will not be able to return to the state you were in before the editing procedure if you have since switched to some unrelated screen.*

● Update SONG

This function allows a song to be played correctly even if it is started partway through. After having moved through the measures using fast forward or reverse, perform an Update by holding down [SHIFT] while pressing [STOP]. If you do not perform the update, the wrong Tones could sound, or they might sound in an inappropriate manner. Note that there is also an "Auto Update" feature, which when turned ON, will automatically perform the update before starting play each time you press [PLAY] (☞ p. 3-7).

● User Tones TONE

User Tones are Tones which you have edited in order to create your own personal sounds. Up to 128 of these Tones can be created.

User Tones, the same as Preset Tones, can be thought of as being GS Tones into which the settings for the Tone Parameters have been combined. The GS Bank Number for User Tones is "81."

V

● Velocity Messages MIDI

These MIDI messages convey the force with which the keys are pressed. Velocity Messages are included within note events.

● Vibrato TONE

Vibrato is an effect which causes the pitch to modulate periodically. The degree to which Vibrato will be applied to each of the Tones can be adjusted with the Rate/Depth/Delay parameters (☞ p. 4-53). During performance, the Pitch Bend Lever can be pushed forward to control the depth of the Vibrato.

● Voice TONE

The most basic sound element created with this instrument is known as a "voice." For each voice, there is a dedicated oscillator which is required to produce it.

If you are using a Tone which is composed of only one voice, only one of these oscillators is needed to produce the single note sounded when you press a key on the keyboard. If the Tone is composed of two voices, however, two of the oscillators will be put to work for each note sounded. Thus, certain Tones will require more voices to produce than others, even if only one note is played.

The JW-50 is equipped with a total of 24 voices that are capable of individual, simultaneous operation.

● Voice Reserve

Voice Reserve is a setting which allow you to specify the minimum number of voices that will always be reserved and made available for certain tracks. This is effective when the total number of voices being used has exceeded the maximum polyphony (24 voices). The values set for Voice Reserve for all tracks combined must add up to 24 voices or less.

● Volume MIDI

The volume can be set individually for each of the tracks in the Mixer mode. Also, the volume setting can be recorded at any desired location in a song, and can also be recorded during playback.

W

● Write Procedure WRITE

"Write" is the name for the procedure which stores data into internal memory, or into a song.

Situations in which data is stored by means of such an operation are as follows:

ⓐ The settings for an edited Tone are stored as a User Tone.
ⓑ A new chord progression is stored as a User Chord Change.
ⓒ The Track Parameter settings are stored as part of a song.
ⓓ Effects settings are stored as part of a song.

CHAPTER 6

APPENDIX

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Troubleshooting

If the JW-50 dose not perform as expect, please check the following points. If you can not solve the problem, discontinue use immediately, contact your Roland dealer or a nearby Roland service station as soon as possible.

⇨ *If a message appears in the display, refer to the following section "Messages Chart."*

● The JW-50 cannot be switched on.

- The power switch is not turned on.
- The AC adaptor is not connected.
- You are using an improper AC adaptor.

● No tracks are heard.

- If sound is heard through headphones, the audio cable(s) may be damaged or disconnected, or the amplifier or mixer is switched off.
- The Master Volume on the JW-50 is set too low.

● A specific track is not heard.

- The track is muted.
- The volume of the track is set too low.
- The volume is lowered with an expression pedal.
- The Output Assign is set to "Ext." (☞p. 4-3)
- If the Tone Name is not shown in the display, a GS Bank Number (Variation Number) that does not contain a Tone is currently selected. Change the Tone on the JW-50.

● The sound is distorted.

- When the sounds of all the tracks are distorted, lower the volume of the connected amplifier or the Master Volume on the JW-50.
- If the sound of a specific track is distorted, lower the volume of the relevant track.

● The pitch of the sound is not correct.

- If the pitch of all tracks is incorrect, check the settings for Master Tune and Key Transpose. (☞p. 4-60)
- If the pitch of a specific track is incorrect, check the settings for Key Shift for that track. (☞p. 4-2)

● The metronome does not sound.

- Check the settings for the metronome. (☞p. 4-4)
- The volume of track 10 is set too low.

● The Aftertouch effect cannot be obtained.

- You have selected a Tone that does not respond to Aftertouch messages.
- Check the settings for the Keyboard Switch. (☞p. 4-61)
- When the basic settings of the GS Format are selected, no Aftertouch effect is obtained. Return to the basic settings of the JW-50. (☞p. 3-45)

● Pitch or Vibrato cannot be changed with the Pitch Bend / Modulation Lever

- Check the settings for the Keyboard Switch. (☞p. 4-61)

● The song does not begin when [PLAY] is pressed.

- You have selected a Song Number where no performance data is recorded.
- The Sync Clock is set to "Slave." (☞ p. 4-63)
- The current position is at the end of the song.

● The beat of the song is not affected by editing "New Meas Beat."

- For measures in which performance data has already been recorded, the beat change data is ignored.

● Certain parts are missing during playback.

- The total number of voices exceeds 24.
  When using a Tone composed of two voices, you can change it to a one-voice Tone and utilize the number of voices more effectively. To change Tones, select the Microscope screen and specify a new Tone Number.
  If the maximum number of voices is only exceeded by a few, you can resolve the situation with the Voice Reserve function. (☞ p. 3-27)

● Notes are delayed in a few places.

- This occurs due to the extra amount of time needed for processing when the tone data in multiple tracks has been recorded at the same timing. Either erase unneeded tone data, or shift somewhat the timing at which the tone data is recorded.

● Settings for the internal sound sources have been altered as a result of playing song data designed for the GS Format, such as SMF Music Data (available separately).

- Perform a JW Reset to return the JW-50 to its original basic settings (☞ p. 4-62).

● Cannot carry out synchronized play when an external sequencer is the master.

- Auto Update is [On] (☞ p. 4-61).

Message Chart

The screen displays a message according to the procedure you are attempting. The following explains these messages. If you do not attempt the correct procedure, or the data is not processed properly, an error message will appear in the display. If this occurs, refer to "Error Messages."

Warning/Confirming/Operational Messages

Are you sure ?

This appears to confirm if you wish to carry out the procedure.
To proceed, press [F4] YES. To cancel, press [F5] NO.

Overwrite OK ?

This message warns you that the disk already contains data with the same name as the new data you are attempting to save. If you wish to erase the previous data on the disk, replacing it with the new data, press [F4] YES. If you wish to retain the data on the disk, press [F5] NO to cancel the saving procedure. Change the name of the new data, then try saving again.

This process will erase all information on the disk.

This message warns you that executing the procedure will erase the data on the disk.
To proceed, press [F1] Execute. To cancel, press [EXIT].

Copyright

This message informs you that a copyright notice is recorded in the song you have selected.
During loading, this message will disappear. During saving or copying, you should continue.

Now Working ...

This message shows that data is now being processed. Wait until the message disappears.

Now Loading ...

This message shows that data is now being loaded. Wait until it changes to "Completed."

Now Saving ...

This message shows that data is now being saved. Wait until it changes to "Completed."

Now Formatting ...

This message indicates that the disk is now being formatted.

Completed

This message indicates that the procedure has been performed successfully.

Memory for undo unavailable, are you sure?

This warning informs you that the unit is running low on available memory, and as a result will not be able to undo the results and revert to the original state if you go ahead and perform the current procedure.
If you are sure you will not need an "Undo," press [F4] YES. Otherwise, press [F5] NO to halt the procedure so you have a chance to free up some additional memory first by erasing unneeded song data. Then you can try the procedure again.

To Song * M=***
Recording Tracks 10 – 14
Are you sure ?
(Press Play /Stop)

This message indicates Song Number/Beginning Measure Number/Track. To change Song Numbers or Beginning Measure Number, press [STOP], return to the Basic screen in the Sequencer mode and then make changes.

No More Data

This message indicates that no more data is recorded in the track.

Error Messages

Cannot Execute

Cause : The settings are not correct.
What to do : Correct the settings, then repeat the procedure.

Out of Memory

Cause : There is not sufficient available memory to proceed. If you are recording, the recording will stop.
What to do : Erase some data in the internal memory to make space, then repeat the procedure.

Disk Full

Cause : There is not sufficient remaining space on the disk.
What to do 1 : Replace the disk with one that has more space.
What to do 2 : Erase some data on the disk to make space, then repeat the procedure.

Insert Disk

Cause : The disk is not inserted correctly.
What to do : Insert the disk properly.

Input Name

Cause : The data has not been named.
What to do : Name the data and repeat the procedure.

Disk Protected

Cause : The protect tab on the disk is set to ON.
What to do : Set the protect tab to OFF, then repeat the procedure.

Improper Disk

Cause : The disk cannot be used with the JW-50.
What to do 1 : Replace the disk with a proper one.
What to do 2 : Format the disk for the JW-50.

Tone Set (********) is not on this disk.

Cause : The disk does not contain the User Tone set that corresponds to the song data.

What to do 1 : When the relevant User Tone set exists on a different disk, press [EXIT], and load only the song data. Then replace the disk with another one and load only the User Tone set.

What to do 2 : If the User Tone set in the internal memory is the same as the User Tone set for the song data, you need not load the User Tone set from the disk. Press [EXIT] and load only the song data.

Read Error

Cause : Data on the disk has been erased or damaged, or the disk itself has been damaged.

What to do : Repeat the procedure. If the same message is shown again, the data cannot be retrieved. If this happens, do not use that disk any longer.

Save Error

Cause : Data on the disk has been erased or damaged, or the disk itself has been damaged.

What to do : Repeat the procedure. If the same message is shown again, the data cannot be retrieved. If this happens, do not use that disk any longer.

Master Disk

Cause : This disk is a master disk. You cannot save data onto a master disk or format it. For example, an SMF Music Data disk released by Roland is a master disk.

What to do : Replace it with another disk.

Copy Prohibited

Cause : This song is copy-protected and therefore cannot be saved onto a disk.

Locate Point Err

Cause : Locate points "0" and "9" are not set properly (the points are set too close to each other or the "9" point is set before the "0" point.)

What to do : Set the Locate points "0" and "9" correctly.

Excl Format Error

Cause : The check sum could not be completed. The JW-50 cannot calculate Exclusive data other than Roland Exclusive Type IV.

What to do : Check the input data and carry out the calculation for the check sum.

Over Work

Cause : Data has not been correctly processed.

What to do : Press [EXIT] then repeat the procedure.

MIDI Error

Cause a : Active sensing messages sent from the external device have been interrupted.

What to do 1 : If this message is shown when the external MIDI device is switched off, there is nothing to worry about.

What to do 2 : Check if the MIDI cable is disconnected or damaged.

Cause b : The JW-50 has received an excessive amount of MIDI data from the external device and cannot process it properly.

What to do : Decrease the amount of MIDI data transmitted to the JW-50. For example, lower the tempo when song data is being transmitted.

Check Sum Error

Cause : The value of the check sum of the received Exclusive message is incorrect.

What to do : Check the check sum value.

Internal Battery Low

Cause : The memory backup battery is exhausted.

What to do : Have the battery replaced at your retail shop or at the nearest Roland service center.

Preset Tone Chart

	Number	Tone name	V	Recommended sound range
Piano	1	Piano 1	1	A0 (21) — C8 (108)
	2	Piano 2	1	
	3	Piano 3	1	
	4	Honky-tonk	2	
	5	E. Piano 1	1	E1 (28) — G7 (103)
	6	E. Piano 2	1	
	7	Harpsichord	1	F2 (41) — F6 (89)
	8	Clav.	1	C2 (36) — C7 (96)
Chromatic Percussion	9	Celesta	1	C4 (60) — C8 (108)
	10	Glockenspiel	1	C5 (72) — C8 (108)
	11	Music Box	1	C4 (60) — C6 (84)
	12	Vibraphone	1	F3 (53) — F6 (89)
	13	Marimba	1	C3 (48) — C6 (84)
	14	Xylophone	1	F4 (65) — C7 (96)
	15	Tubular-bell	1	C4 (60) — F5 (77)
	16	Santur	1	C4 (60) — C6 (84)
Organ	17	Organ 1	1	C2 (36) — C7 (96)
	18	Organ 2	1	
	19	Organ 3	2	
	20	Church Org. 1	1	A0 (21) — C8 (108)
	21	Reed Organ	1	C2 (36) — C7 (96)
	22	Accordion Fr	2	F3 (53) — F6 (89)
	23	Harmonica	1	C4 (60) — C6 (84)
	24	Bandneon	2	F3 (53) — F6 (89)
Guitar	25	Nylon-str. Gt.	1	E2 (40) — C6 (84)
	26	Steel-str. Gt.	1	
	27	Jazz Gt.	1	E2 (40) — D6 (86)
	28	Clean Gt.	1	
	29	Muted Gt.	1	
	30	Overdrive Gt.	1	
	31	Distortion Gt.	1	
	32	Gt. Harmonics	1	
Bass	33	Acoustic Bs.	1	E1 (28) — G3 (55)
	34	Fingered Bs.	1	
	35	Picked Bs.	1	
	36	Fretless Bs.	1	
	37	Slap Bass 1	1	
	38	Slap Bass 2	1	
	39	Synth Bass 1	1	
	40	Synth Bass 2	2	

	Number	Tone name	V	Recommended sound range
Strings/orchestra	41	Violin	1	G3 (55) — C7 (96)
	42	Viola	1	G3 (48) — C6 (84)
	43	Cello	1	C2 (36) — C5 (72)
	44	Contrabass	1	E1 (28) — G3 (55)
	45	Tremolo Str	1	E1 (28) — C7 (96)
	46	PizzicatoStr	1	
	47	Harp	1	B0 (23) — G7 (103)
	48	Timpani	1	C2 (36) — A3 (57)
Ensemble	49	Strings	1	E1 (28) — C7 (96)
	50	Slow Strings	1	
	51	Syn. Strings1	1	C2 (36) — C7 (96)
	52	Syn. Strings2	2	
	53	Choir Aahs	1	C3 (48) — G5 (79)
	54	Voice Oohs	1	
	55	SynVox	1	C3 (48) — C6 (84)
	56	OrchestraHit	2	C3 (48) — C5 (72)
Brass	57	Trumpet	1	A # 3 (58) — A # 6 (94)
	58	Trombone	1	A # 1 (34) — D # 5 (75)
	59	Tuba	1	F1 (29) — G3 (55)
	60	MutedTrumpet	1	A # 3 (58) — A # 5 (82)
	61	French Horn	2	F2 (41) — F5 (77)
	62	Brass 1	1	C2 (36) — C7 (96)
	63	Synth Brass1	2	
	64	Synth Brass2	2	

V : Number of voices

Recommended sound range : The recommended sound range does not indicate the limit of sound production. The actual playable range extends beyond the recommended sound range.

	Number	Tone Name	V	Recommended sound range
Reed	65	Soprano Sax	1	F # 3 (54) — D # 6 (87)
	66	Alto Sax	1	C # 3 (49) — G # 5 (80)
	67	Tenor Sax	1	F # 2 (42) — D # 5 (75)
	68	Baritone Sax	1	C # 2 (37) — G # 4 (68)
	69	Oboe	1	A # 3 (58) — G6 (91)
	70	English Horn	1	E3 (52) — A5 (81)
	71	Bassoon	1	A # 1 (34) — C5 (72)
	72	Clarinet	1	D3 (50) — G6 (91)
Pipe	73	Piccolo	1	D5 (74) — C8 (108)
	74	Flute	1	C4 (60) — C7 (96)
	75	Recorder	1	
	76	Pan Flute	1	
	77	Bottle Blow	2	
	78	Shakuhachi	2	
	79	Whistle	1	
	80	Ocarina	1	
Synth lead	81	Square Wave	2	
	82	Saw Wave	2	
	83	Syn. Calliope	2	
	84	Chiffer Lead	2	
	85	Charang	2	
	86	Solo Vox	2	
	87	5th Saw Wave	2	
	88	Bass&Lead	2	
Synth pad etc.	89	Fantasia	2	
	90	Warm Pad	1	
	91	Polysynth	2	
	92	Space Voice	1	
	93	Bowed Glass	2	
	94	Metal Pad	2	
	95	Halo Pad	2	
	96	Sweep Pad	1	
Synth SFX	97	Ice Rain	2	
	98	Soundtrack	2	
	99	Crystal	2	
	100	Atmosphere	2	
	101	Brightness	2	
	102	Goblin	2	
	103	Echo Drops	1	
	104	Star Theme	2	

	Number	Tone Name	V
Ethnic	105	Sitar	1
	106	Banjo	1
	107	Shamisen	1
	108	Koto	1
	109	Kalimba	1
	110	Bag Pipe	1
	111	Fiddle	1
	112	Shanai	1
Percussive	113	Tinkle Bell	1
	114	Agogo	1
	115	Steel Drums	1
	116	Woodblock *	1
	117	Taiko *	1
	118	Melo Tom 1 *	1
	119	Synth Drum *	1
	120	Reverse Cym. *	2
S F X	121	Gt. FretNoise *	1
	122	Breath Noise	2
	123	Seashore *	1
	124	Bird *	2
	125	Telephone 1 *	1
	126	Helicopter *	1
	127	Applause *	2
	128	Gun Shot *	1

V : Number of voices

Recommended sound range : The recommended sound range does not indicate the limit of sound production. The actual playable range extends beyond the recommended sound range.

* : All Tones marked by an * have unreliable pitch. Please use a key around C4 (Key # 60).

GS Tone Chart

	T #	V #	Tone name	V	Recommended sound range
Piano	1	0	Piano 1	1	A0 (21) — C8 (108)
	2	0	Piano 2	1	
	3	0	Piano 3	1	
	4	0	Honky-tonk	2	
	5	0	E. Piano 1	1	E1 (28) — G7 (103)
		8	Detuned EP 1	2	
	6	0	E. Piano 2	1	
		8	Detuned EP 2	2	
	7	0	Harpsichord	1	F2 (41) — F6 (89)
		8	Coupled Hps.	2	
	8	0	Clav.	1	C2 (36) — C7 (96)
Chromatic Percussion	9	0	Celesta	1	C4 (60) — C8 (108)
	10	0	Glockenspiel	1	C5 (72) — C8 (108)
	11	0	Music Box	1	C4 (60) — C6 (84)
	12	0	Vibraphone	1	F3 (53) — F6 (89)
	13	0	Marimba	1	C3 (48) — C6 (84)
	14	0	Xylophone	1	F4 (65) — C7 (96)
	15	0	Tubular-bell	1	C4 (60) — F5 (77)
		8	Church Bell	1	
	16	0	Santur	1	C4 (60) — C6 (84)
Organ	17	0	Organ 1	1	C2 (36) — C7 (96)
		8	Detuned Or. 1	2	
	18	0	Organ 2	1	
		8	Detuned Or. 2	2	
	19	0	Organ 3	2	
	20	0	Church Org. 1	1	A0 (21) — C8 (108)
		8	Church Org. 2	2	
	21	0	Reed Organ	1	C2 (36) — C7 (96)
	22	0	Accordion Fr	2	F3 (53) — F6 (89)
		8	Accordion It	2	
	23	0	Harmonica	1	C4 (60) — C6 (84)
	24	0	Bandneon	2	F3 (53) — F6 (89)

	T #	V #	Tone name	V	Recommended sound range
Guitar	25	0	Nylon-str. Gt.	1	E2 (40) — C6 (84)
		8	Ukulele	1	A3 (57) — B5 (83)
	26	0	Steel-str. Gt.	1	E2 (40) — C6 (84)
		8	12-str. Gt.	2	
		16	Mandolin	1	G3 (55) — E6 (88)
	27	0	Jazz Gt.	1	E2 (40) — D6 (86)
		8	Hawaiian Gt.	1	
	28	0	Clean Gt.	1	
		8	Chorus Gt.	2	
	29	0	Muted Gt.	1	
		8	Funk Gt.	1	
	30	0	Overdrive Gt.	1	
	31	0	Distortion Gt.	1	
		8	Feedback Gt.	2	
	32	0	Gt. Harmonics	1	
		8	Gt. Feedback	1	
Bass	33	0	Acoustic Bs.	1	E1 (28) — G3 (55)
	34	0	Fingered Bs.	1	
	35	0	Picked Bs.	1	
	36	0	Fretless Bs.	1	
	37	0	Slap Bass 1	1	
	38	0	Slap Bass 2	1	
	39	0	Synth Bass 1	1	
		8	Synth Bass 3	1	
	40	0	Synth Bass 2	2	
		8	Synth Bass 4	2	

T # : Tone number (Program number)
V # : Variation number (GS Bank number)
V : Number of voices
Recommended sound range :
The recommended sound range does not indicate the limit of sound production. The actual playable range extends beyond the recommended sound range.

	T #	V #	Tone name	V	Recommended sound range
Strings/orchestra	41	0	Violin	1	G3 (55) — C7 (96)
	42	0	Viola	1	G3 (48) — C6 (84)
	43	0	Cello	1	C2 (36) — C5 (72)
	44	0	Contrabass	1	E1 (28) — G3 (55)
	45	0	Tremolo Str	1	E1 (28) — C7 (96)
	46	0	PizzicatoStr	1	
	47	0	Harp	1	B0 (23) — G7 (103)
	48	0	Timpani	1	C2 (36) — A3 (57)
Ensemble	49	0	Strings	1	E1 (28) — C7 (96)
		8	Orchestra	2	C1 (24) — C7 (96)
	50	0	Slow Strings	1	E1 (28) — C7 (96)
	51	0	Syn. Strings1	1	C2 (36) — C7 (96)
		8	Syn. Strings3	2	C1 (24) — C7 (96)
	52	0	Syn. Strings2	2	C2 (36) — C7 (96)
	53	0	Choir Aahs	1	C3 (48) — G5 (79)
	54	0	Voice Oohs	1	
	55	0	SynVox	1	C3 (48) — C6 (84)
	56	0	OrchestraHit	2	C3 (48) — C5 (72)
Brass	57	0	Trumpet	1	A # 3 (58) — A # 6 (94)
	58	0	Trombone	1	A # 1 (34) — D # 5 (75)
	59	0	Tuba	1	F1 (29) — G3 (55)
	60	0	MutedTrumpet	1	A # 3 (58) — A # 5 (82)
	61	0	French Horn	2	F2 (41) — F5 (77)
	62	0	Brass 1	1	C2 (36) — C7 (96)
		8	Brass 2	2	
	63	0	Synth Brass1	2	
		8	Synth Brass3	2	
	64	0	Synth Brass2	2	
		8	Synth Brass4	1	

	T #	V #	Tone name	V	Recommended sound range
Reed	65	0	Soprano Sax	1	F # 3 (54) — D # 6 (87)
	66	0	Alto Sax	1	C # 3 (49) — G # 5 (80)
	67	0	Tenor Sax	1	F # 2 (42) — D # 5 (75)
	68	0	Baritone Sax	1	C # 2 (37) — G # 4 (68)
	69	0	Oboe	1	A # 3 (58) — G6 (91)
	70	0	English Horn	1	E3 (52) — A5 (81)
	71	0	Bassoon	1	A # 1 (34) — C5 (72)
	72	0	Clarinet	1	D3 (50) — G6 (91)
Pipe	73	0	Piccolo	1	D5 (74) — C8 (108)
	74	0	Flute	1	C4 (60) — C7 (96)
	75	0	Recorder	1	
	76	0	Pan Flute	1	
	77	0	Bottle Blow	2	
	78	0	Shakuhachi	2	
	79	0	Whistle	1	
	80	0	Ocarina	1	
Synth lead	81	0	Square Wave	2	
	81	8	Sine Wave	1	
	82	0	Saw Wave	2	
	83	0	Syn. Calliope	2	
	84	0	Chiffer Lead	2	
	85	0	Charang	2	
	86	0	Solo Vox	2	
	87	0	5th Saw Wave	2	
	88	0	Bass&Lead	2	
Syhth pad etc.	89	0	Fantasia	2	
	90	0	Warm Pad	1	
	91	0	Polysynth	2	
	92	0	Space Voice	1	
	93	0	Bowed Glass	2	
	94	0	Metal Pad	2	
	95	0	Halo Pad	2	
	96	0	Sweep Pad	1	

T # : Tone number (Program number)
V # : Variation number (GS Bank number)
V : Number of voices
Recommended sound range :
The recommended sound range does not indicate the limit of sound production. The actual playable range extends beyond the recommended sound range.

	T #	V #	Tone name	V
Synth SFX	97	0	Ice Rain	2
	98	0	Soundtrack	2
	99	0	Crystal	2
	100	0	Atmosphere	2
	101	0	Brightness	2
	102	0	Goblin	2
	103	0	Echo Drops	1
	104	0	Star Theme	2
Ethnic	105	0	Sitar	1
	106	0	Banjo	1
	107	0	Shamisen	1
	108	0	Koto	1
		8	Taisho Koto	2
	109	0	Kalimba	1
	110	0	Bag Pipe	1
	111	0	Fiddle	1
	112	0	Shanai	1
Percussive	113	0	Tinkle Bell	1
	114	0	Agogo	1
	115	0	Steel Drums	1
	116	0	Woodblock *	1
		8	Castanets *	1
	117	0	Taiko *	1
		8	Concert BD *	1
	118	0	Melo Tom 1 *	1
		8	Melo Tom 2 *	1
	119	0	Synth Drum *	1
		8	808 Tom *	1
	120	0	Reverse Cym. *	2

T # : Tone number (Program number)
V # : Variation number (GS bank number)
V : Number of voices
* : All Tones marked by an * have unreliable pitch. Please use a key around C4 (Key # 60).

	T #	V #	Tone name	V
SFX	121	0	Gt. FretNoise *	1
		1	Gt. Cut Noise *	1
		2	String Slap *	1
	122	0	Breath Noise	2
		1	Fl. Key Click *	1
	123	0	Seashore *	1
		1	Rain *	2
		2	Thunder *	1
		3	Wind *	1
		4	Stream *	2
		5	Bubble *	2
	124	0	Bird *	2
		1	Dog *	1
		2	Horse-Gallop *	1
	125	0	Telephone 1 *	1
		1	Telephone 2 *	1
		2	Door Creaking *	1
		3	Door *	1
		4	Scratch *	1
		5	Windchime *	2
	126	0	Helicopter *	1
		1	Car-Engine *	1
		2	Car-Stop *	1
		3	Car-Pass *	1
		4	Car-Crash *	2
		5	Siren *	1
		6	Train *	1
		7	Jetplane *	2
		8	Starship *	2
		9	Burst Noise *	2
	127	0	Applause *	2
		1	Laughing *	1
		2	Screaming *	1
		3	Punch *	1
		4	Heart Beat *	1
		5	Footsteps *	1
	128	0	Gun Shot *	1
		1	Machine Gun *	1
		2	Lasergun *	1
		3	Explosion *	2

● Variation Number (GS Bank Number) : 127

T #	Tone name	V
1	Acou Piano 1	1
2	Acou Piano 2	1
3	Acou Piano 3	1
4	Elec Piano 1	1
5	Elec Piano 2	1
6	Elec Piano 3	1
7	Elec Piano 4	1
8	Honkytonk	2
9	Elec Org 1	1
10	Elec Org 2	2
11	Elec Org 3	1
12	Elec Org 4	1
13	Pipe Org 1	2
14	Pipe Org 2	2
15	Pipe Org 3	2
16	Accordion	2
17	Harpsi 1	1
18	Harpsi 2	2
19	Harpsi 3	1
20	Clavi 1	1
21	Clavi 2	1
22	Clavi 3	1
23	Celesta 1	1
24	Celesta 2	1
25	Syn Brass 1	2
26	Syn Brass 2	2
27	Syn Brass 3	2
28	Syn Brass 4	2
29	Syn Bass 1	1
30	Syn Bass 2	2
31	Syn Bass 3	2
32	Syn Bass 4	1

T #	Tone name	V
33	Fantasy	2
34	Harmo Pan	2
35	Chorale	1
36	Glasses	2
37	Soundtrack	2
38	Atmosphere	2
39	Warm Bell	2
40	Funny Vox	1
41	Echo Bell	2
42	Ice Rain	2
43	Oboe 2001	2
44	Echo Pan	2
45	Doctor Solo	2
46	School Daze	1
47	Bellsinger	1
48	Square Wave	2
49	Str Sect 1	1
50	Str Sect 2	1
51	Str Sect 3	1
52	Pizzicato	1
53	Violin 1	1
54	Violin 2	1
55	Cello 1	1
56	Cello 2	1
57	Contrabass	1
58	Harp 1	1
59	Harp 2	1
60	Guitar 1	1
61	Guitar 2	1
62	Elec Gtr 1	1
63	Elec Gtr 2	1
64	Sitar	2

T #	Tone name	V
65	Acou Bass 1	1
66	Acou Bass 2	1
67	Elec Bass 1	1
68	Elec Bass 2	1
69	Slap Bass 1	1
70	Slap Bass 2	1
71	Fretless 1	1
72	Fretless 2	1
73	Flute 1	1
74	Flute 2	1
75	Piccolo 1	1
76	Piccolo 2	2
77	Recorder	1
78	Pan Pipes	1
79	Sax 1	1
80	Sax 2	1
81	Sax 3	1
82	Sax 4	1
83	Clarinet 1	1
84	Clarinet 2	1
85	Oboe	1
86	Engl Horn	1
87	Bassoon	1
88	Harmonica	1
89	Trumpet 1	1
90	Trumpet 2	1
91	Trombone 1	2
92	Trombone 2	2
93	Fr Horn 1	2
94	Fr Horn 2	2
95	Tuba	1
96	Brs Sect 1	1

T #	Tone name	V
97	Brs Sect 2	2
98	Vibe 1	1
99	Vibe 2	1
100	Syn Mallet	1
101	Windbell	2
102	Glock	1
103	Tube Bell	1
104	Xylophone	1
105	Marimba	1
106	Koto	1
107	Sho	2
108	Shakuhachi	2
109	Whistle 1	2
110	Whistle 2	1
111	Bottleblow	2
112	Breathpipe	1
113	Timpani	1
114	Melodic Tom	1
115	Deep Snare	1
116	Elec Perc 1	1
117	Elec Perc 2	1
118	Taiko	1
119	Taiko Rim	1
120	Cymbal	1
121	Castanets	1
122	Triangle	1
123	Orche Hit	1
124	Telephone	1
125	Bird Tweet	1
126	One Note Jam	1
127	Water Bell	2
128	Jungle Tune	2

T # : Tone Number (Program Number)
V : Number of voices

※ Variation number 127 is set to the same sound arrangement of the MT-32 (Roland Multi Timbral Sound Module). But the setting of the Pitch Bend Range, Modulation Depth, etc., are different from that of MT-32. Pan directions are reversed from an actual MT-32, so to rectify this, reverse the L/R connections of the Audio Output jacks.

※ If exclusive messages of the MT-32 are received by the JW-50, the settings of the latter will not be changed.

Drum Set Chart

	Note Number	DS#1 :STANDARD Set DS#33 :JAZZ Set	DS#9: ROOM Set	DS#17: POWER Set	DS#25: ELECTRONIC Set	DS#26: TR-808 Set	DS#41: BRUSH Set	DS#49: ORCHESTRA Set
	27	High Q						Closed Hi-Hat [EXC1]
	28	Slap						Pedal Hi-Hat [EXC1]
	29	Scratch Push						Open Hi-Hat [EXC1]
	30	Scratch Pull						Hide Cymbal
	31	Sticks						
	32	Square Click						
	33	Metronome Click						
	34	Metronome Bell						
	35	Kick Drum 2						Concert BD 2
C2	36	Kick Drum 1		MONDO Kick	Elec BD	808 Bass Drum		Concert BD 1
	37	Side Stick				808 Rim Shot		
	38	Snare Drum 1		Gated SD	Elec SD	808 Snare Drum	Brush Tap	Concert SD
	39	Hand Clap					Brush Slap	Castanets
	40	Snare Drum 2			Gated SD		Brush Swirl	Concert SD
	41	Low Tom 2	Room Low Tom 2	Room Low Tom 2	Elec Low Tom 2	808 Low Tom 2		Timpani F
	42	Closed Hi – hat [EXC1]				808 CHH [EXC1]		Timpani F#
	43	Low Tom 1	Room Low Tom 1	Room Low Tom 1	Elec Low Tom 1	808 Low Tom 1		Timpani G
	44	Pedal Hi – hat [EXC1]				808 CHH [EXC1]		Timpani G#
	45	Mid Tom 2	Room Mid Tom 2	Room Mid Tom 2	Elec Mid Tom 2	808 Mid Tom 2		Timpani A
	46	Open Hi – hat [EXC1]				808 OHH [EXC1]		Timpani A#
	47	Mid Tom 1	Room Mid Tom 1	Room Mid Tom 1	Elec Mid Tom 1	808 Mid Tom 1		Timpani B
C3	48	High Tom 2	Room Hi Tom 2	Room Hi Tom 2	Elec Hi Tom 2	808 Hi Tom 2		Timpani c
	49	Crash Cymbal 1				808 Cymbal		Timpani c#
	50	High Tom 1	Room Hi Tom 1	Room Hi Tom 1	Elec Hi Tom 1	808 Hi Tom 1		Timpani d
	51	Ride Cymbal 1						Timpani d#
	52	Chinese Cymbal			Reverse Cymbal ★			Timpani e
	53	Ride Bell						Timpani f
	54	Tambourine						
	55	Splash Cymbal						
	56	Cowbell				808 Cowbell		
	57	Crash Cymbal 2						Concert Cymbal 2
	58	Vibra – slap						
	59	Ride Cymbal 2						Concert Cymbal 1
C4	60	High Bongo						
	61	Low Bongo						
	62	Mute High Conga				808 High Conga		
	63	Open High Conga				808 Mid Conga		
	64	Low Conga				808 Low Conga		
	65	High Timbale						
	66	Low Timbale						
	67	High Agogo						
	68	Low Agogo						
	69	Cabasa						
	70	Maracas				808 Maracas		
	71	Short Hi Whistle [EXC2]						
C5	72	Long Low Whistle [EXC2]						
	73	Short Guiro [EXC3]						
	74	Long Guiro [EXC3]						
	75	Claves				808 Claves		
	76	High Wood Block						
	77	Low Wood Block						
	78	Mute Cuica [EXC4]						
	79	Open Cuica [EXC4]						
	80	Mute Triangle [EXC5]						
	81	Open Triangle [EXC5]						
	82	Shaker						
	83	Jingle Bell						
C6	84	Belltree						
	85	Castanets						
	86	Mute Surdo [EXC6]						
	87	Open Surdo [EXC6]						
	88	-----						Applause ★
	89	Small Gong						
	90	Big Gong						
	91	Mute Pandiero [EXE7]						
	92	Open Pandiero [EXE7]						
	93	Tamborim						
	94	Tree Chime						
	95	Caxixi						

DS # : Drum Set Number (Program Number)

★ : Percussion sound which are created by using two voices.(All other Percussion sounds are created by one voice.)

Blank : Same as the Percussion sound of "Standard Set."

----- : No sound

[EXC] : Percussion sound of the same number will not be heard at the same time.

●SFX Set

	Note Number	DS#57:SFX Set	
	39	High Q	
	40	Slap	
	41	Scratch Push	
	42	Scratch Pull	
	43	Sticks	
	44	Square Click	
	45	Metronome Click	
	46	Metronome Bell	
	47	Guitar sliding finger	
C3	48	Guitar cutting noise (down)	
	49	Guitar cutting noise (up)	
	50	String slap of double bass	
	51	Fl. Key Click	
	52	Laughing	
	53	Screaming	
	54	Punch	
	55	Heart Beat	
	56	Footsteps1	
	57	Footsteps2	
	58	Applause	★
	59	Door Creaking	
C4	60	Door	
	61	Scratch	
	62	Windchime	★
	63	Car-Engine	
	64	Car-Stop	
	65	Car-Pass	
	66	Car-Crash	★
	67	Siren	
	68	Train	
	69	Jetplane	★
	70	Helicopter	
	71	Starship	★
C5	72	Gun Shot	
	73	Machine Gun	
	74	Lasergun	
	75	Explosion	★
	76	Dog	
	77	Horse-Gallop	
	78	Birds	★
	79	Rain	★
	80	Thunder	
	81	Wind	
	82	Seashore	
	83	Stream	★
C6	84	Bubble	★

DS # : Drum Set Number (Program Number)

★ : Percussion sound which are created by using two voices.(All other Percussion sounds are created by one voice.)

– – – : No sound

[EXC] : Percussion sound of the same number will not be heard at the same time.

※ The SFX and CM-64/32L sets cannot be used in track 10. To use them, change track 16 to a Drum track.

※ The CM-64/32L set is the MT-32 drum set with SFX sounds (note number 76 to 108) added to it.

●CM-64/32L Set

	Note Number	DS#128:CM-64/32L Set	
	34	– – – – –	
	35	Acoustic Bass Drum	
C2	36	Acoustic Bass Drum	
	37	Rim Shot	
	38	Acoustic Snare Drum	
	39	Hand Clap	
	40	Electronic Snare Drum	
	41	Acoustic Low Tom	
	42	Closed High Hat [EXC1]	
	43	Acoustic Low Tom	
	44	Open High Hat 2	
	45	Acoustic Middle Tom	
	46	Open High Hat 1 [EXC1]	
	47	Acoustic Middle Tom	
C3	48	Acoustic High Tom	
	49	Crash Cymbal	
	50	Acoustic High Tom	
	51	Ride Cymbal	
	52	– – – – –	
	53	– – – – –	
	54	Tambourine	
	55	– – – – –	
	56	Cowbell	
	57	– – – – –	
	58	– – – – –	
	59	– – – – –	
C4	60	High Bongo	
	61	Low Bongo	
	62	Mute High Conga	
	63	High Conga	
	64	Low Conga	
	65	High Timbale	
	66	Low Timbale	
	67	High Agogo	
	68	Low Agogo	
	69	Cabasa	
	70	Maracas	
	71	Short Whistle	
C5	72	Long Whistle	
	73	Quijada	
	74	– – – – –	
	75	Claves	
	76	Laughing	
	77	Screaming	
	78	Punch	
	79	Heartbeat	
	80	Footsteps 1	
	81	Footsteps 2	
	82	Applause	★
	83	Creaking	
C6	84	Door	
	85	Scratch	
	86	Windchime	★
	87	Engine	
	88	Car-Stop	
	89	Car-Pass	
	90	Crash	★
	91	Siren	
	92	Train	
	93	Jet	★
	94	Helicopter	
	95	Starship	★
C7	96	Pistol	
	97	Machine Gun	
	98	Lasergun	
	99	Explosion	★
	100	Dog	
	101	Horse-Gallop	
	102	Birds	★
	103	Rain	★
	104	Thunder	
	105	Wind	
	106	Waves	
	107	Stream	★
C8	108	Bubble	★

■ Music Style/ Preset Chord Change Chart

No.	Music Style Name/ Preset Chord Change Name	Chord (Original/Variation 1/Variation 2)							
1	Rock 1	Em	>Em	>GMaj	>GMaj	>AMaj	>AMaj	>BMaj	>BMaj
		Fm	>Fm/A ♭	>E ♭ Maj/C	>Cm7	>Fm	>Fm7/A ♭	>E ♭ 7	>E ♭ 7
		Dm	>FMaj	>GMaj	>Dm	>Dm	>FMaj	>GMaj	>Dm
2	Rock 2	CMaj	>CMaj	>E ♭ Maj	>E ♭ Maj	>F7	>F7	>G7	>G7
		Am	>FMaj	>GMaj	>Am	>Am	>FMaj	>GMaj	>Am
		Cm7	>Cm7	>E ♭ Maj	>FMaj	>Cm7	>Cm7	>Cm7/G	>Cm7/G
3	Rock 3	E7	>E7	>E7	>E7	>AMaj	>AMaj	>B7	>B7
		CMaj	>CMaj	>C7	>C7	>E ♭ Maj	>E ♭ Maj	>FMaj	>FMaj
		Em7	>Em7	>Em7	>Em7	>Em7	>Em7	>Em7	>G7
4	Triplet Rock	E ♭ Maj	>FMaj	>FMaj/C	>CMaj	>E ♭ Maj	>FMaj	>FMaj/C	>CMaj
		CMaj	>CMaj	>B ♭ Maj	>B ♭ Maj	>E ♭ Maj	>E ♭ Maj	>A ♭ Maj	>G7
		CMaj	>CMaj	>FMaj	>FMaj	>CMaj	>CMaj	>G7	>G7
5	Funk	C7	>C7	>C7	>C7	>C7	>C7	>C7	>C7
		Cm7	>Cm7	>Cm7	>Cm7	>Cm7	>Cm7	>Cm7	>Cm7
		Dm	>Dm	>Dm	>Dm	>C7	>C7	>C7	>C7
6	Brass Funk	E7	>E7	>D7	>D7	>GMaj	>GMaj	>A7	>A7
		E7	>E7	>E7	>E7	>E7	>E7	>E7	>E7
		CMaj/D	>DMaj	>FMaj/D	>DMaj	>CMaj/D	>DMaj	>FMaj/D	>DMaj
7	R & B	D7	>D7	>C7	>C7	>D7	>D7	>D7	>D7
		D7	>D7	>C7	>C7	>Em	>Em	>D7	>D7
		C7	>C7	>Dm	>G7	>C7	>C7	>C7	>C7
8	Fusion 1	C69	>C7/E	>FM7	>Fm7/B ♭	>Am9	>D9	>Dm7/G	>G7
		Em9	>Em9	>F#m11	>B7	>Em9	>Em9	>F#m11	>B7
		CM7	>CM7	>Bm7	>Em7	>Am7	>D7	>GM7	>C#7
9	Fusion 2	Bm11	>Bm11	>Bm11	>Bm11	>B ♭ M7	>B ♭ M7	>B ♭ M7	>B ♭ M7
		Fm7	>B ♭ 7	>E ♭ M7	>A ♭ M7	>Am7 ♭ 5	>D7	>Gm7	>F#m7
		Gm7/C	>Gm7/C	>Gm7/C	>Gm7/C	>B ♭ m7/E ♭	>B ♭ m7/E ♭	>B ♭ m7/E ♭	>B ♭ m7/E ♭
10	Jazz Funk	Cm7	>Cm7	>Cm7	>Cm7	>Cm7	>Cm7	>C7	>C7
		F7	>F7	>F7	>F7	>F7	>F7	>F7	>F7
		G7	>G7	>G7	>G7	>G7	>G7	>G7	>G7
11	Pops	FM7	>FM7	>Em7	>Em7	>Dmad9	>Dmad9	>CM7	>CM7
		C7	>C7	>Dm/C	>Dm/C	>Em7/C	>Em7/C	>Dm7	>G7
		CMaj	>GMaj/B	>Am	>Em/G	>FMaj	>CMaj/E	>Dm7	>G7
12	8Beat Pops	Fm	>Fm	>E ♭ Maj	>E ♭ Maj	>C#Maj	>C#Maj	>C7	>C7
		CM7	>CM7	>CM7	>CM7	>CM7/A	>CM7/A	>CM7/A	>CM7/A
		CMaj	>CMaj	>Am	>Am	>FMaj	>FMaj	>G7	>G7
13	16Beat Pops	Dm	>FMaj	>G7	>GMaj	>FMaj	>Dm7	>C7	>C7
		C6	>Dm7	>Em7	>Dm7/F	>C6	>Dm7	>Em7	>G7
		CMaj	>GMaj/B	>C7/B ♭	>FMaj/A	>Fm/A ♭	>CMaj/G	>D7/F#	>G7
14	Rap	C7	>C7	>C7	>C7	>C7	>C7	>C7	>C7
		C7	>F7	>C7	>F7	>C7	>F7	>C7	>F7
		Cm	>Cm	>Cm	>Cm	>Cm	>Cm	>Cm	>Cm7
15	House	Cm7	>Cm7	>Dm7	>G7	>Cm7	>Cm7	>Dm7	>G7
		Cm9	>Cm9	>Cm9	>Cm9	>C#7	>C#7	>C#7	>C#7
		E7	>E7	>E7	> E7	>E7	>E7	>E7	>E7

No.	Music Style Name/ Preset Chord Change Name	Chord (Original/Variation 1/Variation 2)							
16	Hip Hop	C7	>C7	>C7	>C7	>C7	>C7	>C7	>GMaj
		C7	>C7	>C11	>C11	>C9	>C9	>Csus4	>Csus4
		E7	>E7	>D9	>D9	>CMaj/E	>CMaj/E	>D9	>D9
17	Dance	FMaj	>FMaj	>GMaj	>GMaj	>CMaj	>CMaj	>C7	>C7
		FMaj	>E ♭ Maj	>FMaj	>A ♭ Maj/E ♭	>FMaj	>E ♭ Maj	>FMaj	>A ♭ Maj/E ♭
		FM7	>G7	>Em7	>Am7	>Fad9	>G7	>Cad9	>C7
18	Electro Pops	Em	>Em	>DMaj	>DMaj	>CMaj	>CMaj	>DMaj	>DMaj
		CMaj	>CMaj	>C11	>C11	>FMaj/C	>FMaj/C	>CMaj	>CMaj
		Gm9	>Gm9	>Cm9	>Cm9	>Gm9	>Gm9	>Cm9	>Dm7
19	Oldies	A7	>A7	>A7	>A7	>D7	>D7	>A7	>A7
		CMaj	>CMaj	>Em	>Em	>Dm	>Dm	>G7	>G7
		C7	>C7	>C7	>C7	>C7	>C7	>C7	>C7
20	Country	C7	>C7	>Dm	>G7	>C7	>C7	>E ♭ Maj	>B ♭ Maj/D
		C7	>C7	>D7	>G7	>C7	>G7	>C7	>C7
		C6	>C7	>F6	>Fm7/A ♭	>C6	>G7	>C6	>C6
21	Jazz	C9	>Em7 ♭ 5	>F9	>F9	>C9	>Am9	>D9	>G9
		C69	>C69	>A7	>A7	>Dm11	>Dm11	>G7	>G7
		C7	>C7	>C7	>C7	>F7	>F7	>F7	>F7
22	Blues	C7	>C9/E	>F9	>F9/A	>C7	>C7/B ♭	>C7/C	>C7/E
		F9	>F9	>F#dim	>F#dim	>C7/G	>C7	>C7	>C7/E
		G7	>G7	>F7	>F7	>C7	>F7	>C7	>G7
23	Ballade	C7	>C7/E	>F7	>F#dim	>CMaj/G	>Am7	>D7	>G7
		Cm7	>F7	>B ♭ M7	>E ♭ M7	>Am7 ♭ 5	>D7	>Gm7	>G7
		FMaj	>Dm7	>Gm7	>C7	>FMaj	>D7	>G7	>C7
24	Shuffle	E9	>E9	>A13	>A13	>E9	>E9	>A13	>A13
		A7	>A7	>A7	>A7	>D7	>D7	>E7	>E7
		E7	>E7	>E7	>E7	>E7	>E7	>E7	>E7
25	Bossa Nova	Gm7	>Gm7	>C7	>C7	>FM7	>FM7	>D7	>D7
		CM9	>C6/A	>Dm7	>Dm9/G	>CM9	>C6/A	>Dm7	>Dm9/G
		CM7	>C#dim/A	>Dm9	>Dm9/G	>CM7	>F#Maj/A	>FMaj/D	>EMaj/G
26	Salsa	Gm7	>C7	>Am7 ♭ 5	>D7	>Gm7	>C7	>FMaj	>D7
		Fm	>FmM7/E	>Fm7/E ♭	>Fm6/D	>Fm	>FmM7/E	>Fm7/E ♭	>Fm6/D
		CMaj	>FMaj	>G7	>CMaj	>CMaj	>FMaj	>G7	>CMaj
27	Samba	Cm7	>Fm9	>Dm7 ♭ 5	>G7	>Cm7	>Fm9	>Dm7 ♭ 5	>G7
		C6	>Dm7	>G7	>C6	>C6	>F6	>Bm7 ♭ 5/G	>C6
		Cm11	>Cm11	>E ♭ M7	>A ♭ M9	>Gm7	>Gm7	>Gm7	>Gm7
28	Reggae	C7	>C7	>C7	>C7	>C7	>C7	>C7	>C7
		D7	>D7	>C7	>D7	>D7	>D7	>A7	>D7
		CMaj	>C7/E	>FMaj	>GMaj	>CMaj	>C7/E	>FMaj	>GMaj
29	African Rock	Cm7	>Cm7	>Dm7/C	>Dm7/C	>E ♭ M7	>E ♭ M7	>Dm7/C	>Dm7/C
		C11	>C11	>CMaj	>CMaj	>C7su4	>C7su4	>CMaj	>CMaj
		F7	>F7	>F11	>F7	>F9	>Fad9	>F11	>F7
30	Waltz	GM7	>GM7	>DM7	>DM7	>GM7	>GM7	>DM7	>DM7
		C6	>C6	>C#dim	>C#dim	>Dm7	>Dm7	>G7	>G7
		Gm7	>C9	>FM7	>B ♭ M7	>Em7 ♭ 5	>A7	>Dm7	>D7

Operation Mode Chart

SEQUENCER

REALTIME

- F1 Track Parameter **WRITE**
- F2 Song Information
- F3 Metronome
- F4 Tempo Recording
- REC Realtime Rec Standby
- SHIFT + REC Multi-Rec Standby
- LOOP → REC → F1 Realtime Erase

MICRO/STEP

- F1 Erase
- F2 Create
- F3 Move
- F4 View
- REC Step Rec
  - F1 Step Rec Parameter

SONG EDIT

Menu 1 ↕ F5 ↕ Menu 2

- F1 Copy
- F2 Erase
- F3 Move
- F4 Insert Measure
- SHIFT + F1 Delete Measure
- SHIFT + F2 Song Copy

Menu 2

- F1 Quantize
- F2 Transpose
- F3 Data Thin
- F4 Change Velocity
- SHIFT + F1 Change Gate Time
- SHIFT + F2 Tone Data Conversion

MIXER

- F1 → Volume
  - F2 Volume (Numeric)
  - F3 Pan
  - F4 Pan (Numeric)
- REC

TONE

- F1 Tone Edit
- **WRITE**

EFFECTS

- F1 → Reverb Send
  - F2 Reverb Parameter
  - F3 Chorus Send
  - F4 Chorus Parameter
- **WRITE**

BLOCK

- REC
- **WRITE**

MAKE SONG

- REC

DISK

- Menu
  - F1 Load
  - F2 Save
  - F3 Delete
  - F4 Format

TUNE/FUNC

- F1 → Tune/Function 1
  - F2 Tune/Function 2

MIDI

- F1 → Rx Switch
  - F2 System

CHAIN LOAD

LOCATE

INFORMATION

Parameter Chart

Tune/Function Parameter

Parameter		Value	Initial Setting	Display
Master Tune		415.3Hz to 466.2Hz	440.0Hz	[Tune/Function 1] ([TUNE/FUNC])
Key Transpose		−24 to +24 (semitone step)	0	
Octave Transpose		−2 to +2 octave	0	
Auto Update		On, Off	Off	[Tune/Function 2] ([TUNE/FUNC] ➡ [F2] T/Func2)
Pedal Switch Assign		Start/Stop, Punch I/O	Start/Stop	
External Control Assign		Expression, Modulation, C. After	Expression	
Note Name (each black key)		#, ♭	C#, E♭, F#, A♭, B♭	
Keyboard Switch	Channel Aftertouch	On, Off	On	
	Pitch Bend	On, Off	On	
	Modulation	On, Off	On	

Metronome

Parameter	Value	Initial Setting	Display
Metronome Mode	Rec Only, Rec & Play, Off	Rec Only	[Metoronome] (Sequencer's Basic screen ➡ [F3] Metro)
Tone (Volume)	Bell & Click (Vol 1) to Bell & Click (Vol 3), Square Click (Vol 1), Square Click (Vol 2)	Bell & Click (Vol 2)	

MIDI Parameter

Parameter		Value	Initial Setting	Display
Receive Switch	Aftertouch	On, Off	On	[MIDI : Rx Switch] ([MIDI])
	Pitch Bend	On, Off	On	
	Modulation	On, Off	On	
	Tone Change	On, Off	On	
	Exclusive	On, Off	On	
Sync Clock		Int, Slave, Remote	Int	[MIDI : System] ([MIDI] ➡ [F2] System)
Sync Out		On, Off	Off	
MIDI Update		On, Off	Off	
Soft Thru		On, Off	Off	
Active Sensing Out		On, Off	On	

Tone Parameter

Parameter		Value	Display
Tone Name		12 characters	[Write : Tone] ([Tone] or [Tone Edit] ➡ [WRITE])
Source Tone	Tone Number	1 to 128	[Tone Edit] ([TONE] ➡ [F1] Tone Edit)
	Variation Number	0 to 127	
Vibrato Rate		−50 to +50	
Vibrato Depth		−50 to +50	
Vibrato Delay		−50 to +50	
Cutoff Frequency		−50 to +16	
Resonance		−50 to +50	
Attack Time		−50 to +50	
Decay Time		−50 to +50	
Release Time		−50 to +50	
User Tone Set Name		8 characters	[Save] ([DISK MENU] ➡ [F2] Save)

Song Parameter

Parameter		Value	Initial Setting	Display
Song Name		12 characters	Blank	[Song Information] or [Save]
State (Track 1 to 16)		P (Play), M (Mute)	– – –	Sequencer's Basic screen
State (Tempo Track)		P (Play), M (Mute)	P (Play)	
Track Parameter	Track Type ＊1	Normal, Drum	Normal (Track 16)	[Track Parameter] (Sequencer's Basic screen ➡ [F1] TrckPrm)
	Key Shift	−24 to +24 (semitone step)	0	
	Bend Range	0 to 24 (semitone step)	2	
	M/P Mode	Poly, Mono	Poly	
	Voice Reserve	0 to 24 (The total number of voices in all tracks is 24.)	2 (Track 1 to 7, 10 to 14) 0 (Track 8, 9, 15, 16)	
	Output Assign	Int, & Ext, Int, Ext	Int & Ext	
	Tranmit Channel	1 to 16	Same as the Track Number.	
Reverb	Type	Room 1 to 3, Hall 1 to 2, Plate, Delay, Panning Delay	Hall 2	[Reverb Parameter] ([EFFECTS] ➡ [F2] RevPara)
	Pre-Low Pass Filter	1 to 8	1	
	Feedback	0 to 127	0	
	Time	0 to 127	64	
	Level	0 to 127	64	
	Send Level (Track 1 to 16)	0 to 127	40	[Reverb Send] ([EFFECTS])
Chorus	Type	Chorus 1 to 4, Feedback Chorus, Flanger, Short Delay, Short Delay (FB)	Chorus 3	[Chorus Parameter] ([EFFECTS] ➡ [F4] ChrPara)
	Pre-Low Pass Filter	1 to 8	1	
	Feedback	0 to 127	8	
	Rate	0 to 127	3	
	Level	0 to 127	64	
	Delay	0 to 127	80	
	Depth	0 to 127	19	
	Send Level (Track 1 to 16)	0 to 127	0	[Chorus Send] ([EFFECTS] ➡ [F3] ChrSend)
Locate Point 0 to 9		Measure/Beat/Clock	1/1/0	[Locate] ([LOCATE])

＊1 Tracks 1 to 9 and 11 to 15 are fixed to Standard.
Track 10 is for Drums.
Only track 16 is switchable.

MIDI Event Chart

MIDI Events that can be recorded in Real-Time

Operation (MIDI Status)		MIDI Event (Microscope Display)
Press a key (Note)		Note Name (Note Number) : C-1 (0) to G9 (127) v = (Velocity) : 1 to 127 g = (Gate Time) : number of clock pulses
Apply pressure on key (s) (Channel Aftertouch)		C. After Val = 0 to 127
Select a Tone (Tone Change)		Tone Bank (MSB, LSB) : GS Bank Number Preset Tone (80, 0), User Tone (81, 0) Prg = (Tone Number) : 1 to 128
Move the Pitch Bend/Modulation Lever to raise or lower the pitch (Pitch Bend)		P. Bend Rng = 0 to 24 semitones (the maximum pitch change caused by moving the lever to the right (or left) extreme.) Val = −8192~+8191
Push the Pitch Bend/Modulation Lever forward (Modulation)		C. Chg 1 (Modulation) = 0 to 127
Press the pedal connected to the Hold Jack		C. Chg 64 (Hold 1) = 0 to 63 (Off), 64 to 127 (On)
Press the pedal connected to the EXT Control Jack	Expression	C. Chg 11 (Expression) = 0 to 127
	Modulation	C. Chg 1 (Modulation) = 0 to 127
	Channel Aftertouch	C. After Val = 0 to 127
Mixer Mode	Volume	C. Chg 7 (Volume) = 0 to 127
	Pan	C. Chg 10 (Panpot) = 0 (Left) to 64 (Center) to 127 (Right)

Major MIDI Events that can only be entered with the Microscope

MIDI Status		MIDI Event (Microscope Display)
Portamento Time		C. Chg 5 (Porta Time) = 0 to 127
Portamento		C. Chg 65 (Portamento) = 0 to 63 (Off), 64 to 127 (On)
Sostenuto		C. Chg 66 (Sostenuto) = 0 to 63 (Off), 64 to 127 (On)
Soft		C. Chg 67 (Soft) = 0 to 63 (Off), 64 to 127 (On)
Reverb Send Level		C. Chg 91 (Reverb Send) = 0 to 127
Chorus Send Level		C. Chg 93 (Chorus Send) = 0 to 127
Tone Parameter (*1)	Vibrato Rate	NRPN 136 (Vib Rate) = 0 to 127
	Vibrato Depth	NRPN 137 (Vib Depth) = 0 to 127
	Vibrato Delay	NRPN 138 (Vib Delay) = 0 to 127
	Cutoff Frequency	NRPN 160 (Cutoff Freq) = 0 to 127
	Resonance	NRPN 161 (Resonance) = 0 to 127
	Attack Time	NRPN 227 (Attack Time) = 0 to 127
	Decay Time	NRPN 228 (Decay Time) = 0 to 127
	Release Time	NRPN 230 (Release Time) = 0 to 127
Drum Instrument (*2)	Pitch Coarse	NRPN 3072 + Note Number = 0 to 127
	TVA Level	NRPN 3328 + Note Number = 0 to 127
	Panpot	NRPN 3584 + Note Number = 0 to 127
	Reverb Send Level	NRPN 3712 + Note Number = 0 to 127
	Chorus Send Level	NRPN 3840 + Note Number = 0 to 127
Polyphonic Aftertouch (*3)		P. After Note Name (Note Number) : C-1 (0) to G9 (127) Val = 0 to 127
Fine Tune		RPN 1 (Fine Tune) = 0 to 16383 (−100 to +100 sent)
Coarse Tune (*4)		RPN 2 (Coarse Tune) = 0 to 16383 (−64 to +63 semitone)
GS Exclusive		Address, Data (Value) * Entered in hexadecimal form.
Exclusive		See next page.

*1 : When using the Microscope to input Tone parameters, the unit will appear to accept values within the range of 0 to 127. However, the internal sound sources will in fact only recognize values within the range of − 50 to +50, with 64 as the median value. (Exception: Cut-off frequency; − 50 to +16.) For this reason, any values you input that cannot be recognized will be ignored.

*2 : For example, if you wish to set the Reverb Send Level for Low Tom 1 (Note No. 43) to 127, you would input "NRPN 3755 (3712+43) =127."

* 3 : In the basic settings of the JW-50, the Polyphonic Aftertouch effect cannot be obtained. To obtain Polyphonic Aftertouch, set the parameters to be changed with GS-Exclusive messages.

* 4 : The internal sound sources will in fact only recognize values within the range of − 24 to +24 semitone.

Creating GS Exclusive Events

To edit parameter settings in each track of the GS Format sound source with Exclusive messages, such as the JW-50, use "GS-Exclusive." "GS-Exclusive" can be set by specifying only the address and data (value) of the parameter.

* The addresses of the Exclusive Events that can be created are as follows. ("n" in each address is automatically set to match each track to be created. This cannot be changed when creating GS Exclusive Events.) To create Exclusive Events of the other addresses, use "Exclusive."
[40 1n 02] to [40 1n 16], [40 1n 19] to [40 1n 37], [40 2n 00] to [40 2n 5A]

⇨ Address and data of each parameter is shown in the MIDI Implementation. (☞p. 6-28)

⇨ To specify A to F in hexadecimal form, press [0] (A) to [5] (F) while holding [SHIFT] down.

< Example >

To control the pitch (maximum of 1 octave) of track 1 with Polyphonic Aftertouch, follow this procedure:

① Select track 1 in the Microscope screen.

② Move the cursor to the position where the Event should be entered.

③ [F2] Create — Select the Create Event screen.

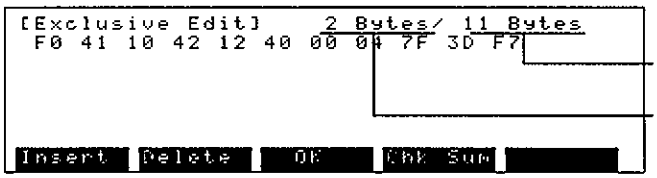
④ [SHIFT] + [F4] GS-Ex — GS Exclusive Event is entered at the specified position and the Microscope screen is recalled.

⑤ Change the value (hexadecimal) to [40 21 30 4C].

Creating and Editing Exclusive Events

Creating an Exclusive Event

In the Create Event screen in the Microscope mode, press [SHIFT] + [F5] to select the Exclusive Edit screen. Specify the value (hexadecimal) to create an Exclusive Event.


[Exclusive Edit] 2 Bytes/ 11 Bytes
F0 41 10 42 12 40 00 04 7F 3D F7
Insert
Delete
OK
Chk Sum
The amount of data for the Exclusive Event
The position of the cursor

** In the initial screen, data of [10 42 12 40 00 04 7F 3D] (Master Volume : 127) is set. If you do not require it, change it to the value you wish to create.*

In Roland Exclusive Format (Type IV), data is set as follows:

Exclusive Status	F0H
Manufacturer ID (Roland)	41H
Device ID	– – –
Model ID	– – –
Command ID (Data Set)	12H
Data	Address ➡ Data ➡ Check Sum
End Of Exclusive	F7H

⇨ *The Device ID of the JW-50 is 10H, and the Model ID is 42H (the same as the GS Format).*
⇨ *For a detailed explanation of Roland's Exclusive Format (Type IV), see page 6-26.*
⇨ *Regarding the Exclusive format of different makers, refer to the operation manual of the relevant product.*
⇨ *To specify A to F in hexadecimal form using the Numeric Keys, press [0] (A) to [5] (F) while holding [SHIFT] down.*

[F1] Insert To insert data, move the cursor to the position where data should be inserted and press [F1] Insert. Pressing [F1] will insert [00]. After inserting [00], change it to the value you require.

[F2] Delete This deletes the value at the cursor position.

[F3] OK This enters the Exclusive Event you have created at the specified position. The Microscope screen is recalled.

[F4] Chk Sum The check sum of Roland's Exclusive Events (Type IV) can be automatically calculated. Before pressing [F4], enter any check sum value just before [F7]. Pressing [F4] will automatically calculate the check sum. When the calculation is complete, the screen will display "Completed" and then the calculated value.

** To stop creating the Exclusive Event, press [EXIT].*
** If there is any error in the created Exclusive Event, the screen will display "Excl Format Error." The check sum cannot be calculated.*

Editing Exclusive Events

Move the cursor to "Exclusive" in the Microscope screen. The same Exclusive Edit screen when creating the Exclusive Event is recalled. Edit the value using the same procedure used when creating the Exclusive Event. When you have edited the Exclusive Event that corresponds to Roland's Exclusive Format (Type IV), press [F3]. Re-calculate the check sum.

Converting to Standard MIDI Files Compatible with GS Format

Making the Conversion

Follow the steps below to convert the JW-50's song data.

① Using the Tone Data Conversion feature (☞ p. 4-37) convert the tone data recorded in the song to tone data which is compatible with the GS Format.

② Use the Insert Measure function (☞ p. 4-29) to insert one empty measure at the beginning of the song.

③ Using the Microscope (☞ p. 4-13), input into the empty measure the MIDI events necessary to have the song played correctly.

④ Save it as a Standard MIDI File.

MIDI Events to Input

The following describes the MIDI Events that need to be input in step ③ above.

● GS Reset

First, in order to obtain the basic settings for the GS Format, you need to input a GS Reset at position 1/1/0. It does not matter in which track it is placed.

● Other MIDI Events

You also need to input the other MIDI events necessary to play songs correctly when the basic settings for the GS Format are in force. Compare the settings shown below with the settings that are contained in the song, and where they are different, input the appropriate MIDI event into the track.

Track Parameter	Track Type (only track 16)		Normal													
	Key Shift (each track)		0													
	M/P Mode (each track)		Poly													
	Voice Reserve	track	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		number of voices	6	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0
Effects Parameter	Reverb		Type: Hall 2, Pre LPF: 1, Feedback :0, Time: 64, Level: 64															
	Chorus		Type: Chorus 3, Pre LPF: 1, Feedback: 8, Rate: 3, Level: 64, Delay: 80, Depth: 19															
	Reverb Send Level (each track)		40															
	Chorus Send Level (each track)		0															

Note that under the basic settings for the GS Format, Channel Aftertouch cannot be obtained. In order to be able to use Channel Aftertouch to control the cut-off frequency, you will need to input the appropriate MIDI events into each of the tracks.

** All MIDI events other than the GS Reset need to be input at position 1/2/0. You also need to make sure to always place an interval of at least 1 clock between each MIDI event. If the interval between MIDI events is too short, the sound generating unit may be unable to correctly recognize the individual events.*

How to Input MIDI Events

< Those input as Exclusive Events (SHIFT + F5 Excl) >

The events can be input in any desired track.

** The value located immediately before F7 is the checksum value. After data has been input, supply a reasonable value for it, then press F4 Chk Sum to replace that value with the calculated value.*

** When inputting Reverb, start by inputting the Reverb Type.*

** When inputting Chorus, start by inputting the Chorus Type.*

● GS Reset

F0 41 10 42 12 40 00 7F 00 41(sum) F7

● Voice Reserve (Address: 40 01 10; VOICE RESERVE)

Ex.: Restoring the JW-50's basic settings (2 voices per track for tracks 1 to 7 and 10 to 14; other tracks 0)

F0 41 10 42 12 40 0110 02 02 02 02 02 02 02 02 00 00 02 02 02 02 00 00 17 F7

(Track 10 1 2 3 4 5 6 7 8 9 11 12 13 14 15 16)

● Reverb

Type (Address: 40 01 30; REVERB MACRO)

Ex.: To set to Room 1 (00H)·····F0 41 10 42 12 40 01 30 00 0F F7

Pre LPF (Address: 40 01 32; REVERB PRE LPF)

Ex.: To set to 1 (00H)·····F0 41 10 42 12 40 01 32 00 0D F7

Feedback (Address: 40 01 35; REVERB DELAY FEEDBACK)

Ex.: To set to 0 (00H)·····F0 41 10 42 12 40 01 35 00 0A F7

Time (Address: 40 01 34; REVERB TIME)

Ex.: To set to 64 (40H)·····F0 41 10 42 12 40 01 34 40 4B F7

Level (Address: 40 01 33; REVERB LEVEL)

Ex.: To set to 64 (40H)·····F0 41 10 42 12 40 01 33 40 4C F7

● Chorus

Type (Address: 40 01 38; CHORUS MACRO)

Ex.: To set to Chorus 1 (00H)·····F0 41 10 42 12 40 01 38 00 07 F7

Pre LPF (Address: 40 01 39; CHORUS PRE LPF)

Ex.: To set to 1 (00H)·····F0 41 10 42 12 40 01 39 00 06 F7

Feedback (Address: 40 01 3B; CHORUS FEEDBACK)

Ex.: To set to 8 (08H)·····F0 41 10 42 12 40 01 3B 08 7C F7

Rate (Address: 40 01 3D; CHORUS RATE)

Ex.: To set to 3 (03H)·····F0 41 10 42 12 40 01 3D 03 7F F7

Level (Address: 40 01 3A; CHORUS LEVEL)

Ex.: To set to 64 (40H)·····F0 41 10 42 12 40 01 3A 40 45 F7

Delay (Address: 40 01 3C; CHORUS DELAY)

Ex.: To set to 80 (50H)·····F0 41 10 42 12 40 01 3C 50 33 F7

Depth (Address: 40 01 3E; CHORUS DEPTH)

Ex.: To set to 19 (13H)·····F0 41 10 42 12 40 01 3E 13 6E F7

< Those input as GS Exclusive Events (SHIFT + F4 GS – Ex) >

● Key Shift (Address: 40 1n 16; PITCH KEY SHIFT)
Ex.: To set to 12 (0CH) 40 1n 16 0C

● Track Type (Address: 40 1F 15; USER FOR RHYTHM PART)
To set Track 16 to "Drum" (02H) 40 1F 15 02

● Channel Aftertouch (Address: 40 2n 21; CAf TVF CUTOFF CONTROL)
40 2n 21 7F

< Those input as Control Change Events (F5 C.Chg) >

Need to be input in decimal.

● M/P Mode
To set to "MONO" C.Chg 126 = 1

● Reverb Send Level
Ex.: To set to 64 C.Chg 91 (Reverb Send) = 64

● Chorus Send Level
Ex.: To set to 64 C.Chg 93 (Chorus Send) = 64

Roland Exclusive Messages

1. Data Format for Exclusive Messages

Roland's MIDI Implementation uses the following data format for all exclusive messages (type IV):

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
CMD	Command ID
[BODY]	Main data
F7H	End of exclusive

MIDI status: F0H, F7H

An exclusive message must be flanked by a pair of status codes, starting with a Manufacturer-ID immediately after F0H (MIDI version1.0).

Manufacturer-ID: 41H

The Manufacturer-ID identifies the manufacturer of a MIDI instrument that triggers an exclusive message. Value 41H represents Roland's Manufacturer-ID.

Device-ID: DEV

The Device-ID contains a unique value that identifies the individual device in the multiple implementation of MIDI instruments. It is usually set to 00H – 0FH, a value smaller by one than that of a basic channel, but value 00H – 1FH may be used for a device with multiple basic channels.

Model-ID: MDL

The Model-ID contains a value that uniquely identifies one model from another. Different models, however, may share an identical Model-ID if they handle similar data.

The Model-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Model-IDs, each representing a unique model:

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

Command-ID: CMD

The Command-ID indicates the function of an exclusive message. The Command-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Command-IDs, each representing a unique function:

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

Main data: BODY

This field contains a message to be exchanged across an interface. The exact data size and contents will vary with the Model-ID and Command-ID.

2. Address-mapped Data Transfer

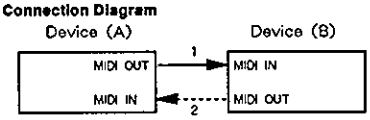
Address mapping is a technique for transferring messages conforming to the data format given in Section 1. It assigns a series of memory-resident records--waveform and tone data, switch status, and parameters, for example--to specific locations in a machine-dependent address space, thereby allowing access to data residing at the address a message specifies.

Address-mapped data transfer is therefore independent of models and data categories. This technique allows use of two different transfer procedures: one-way transfer and handshake transfer.

One-way transfer procedure (See Section 3 for details.)

This procedure is suited for the transfer of a small amount of data. It sends out an exclusive message completely independent of a receiving device status.

Connection Diagram

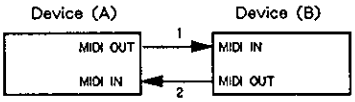


Connection at point 2 is essential for "Request data" procedures. (See Section 3.)

Handshake-transfer procedure (This device does not cover this procedure)

This procedure initiates a predetermined transfer sequence (handshaking) across the interface before data transfer takes place. Handshaking ensures that reliability and transfer speed are high enough to handle a large amount of data.

Connection Diagram



Connection at points 1 and 2 is essential.

Notes on the above two procedures

* There are separate Command-IDs for different transfer procedures.
* Devices A and B cannot exchange data unless they use the same transfer procedure, share identical Device-ID and Model ID, and are ready for communication.

3. One-way Transfer Procedure

This procedure sends out data all the way until it stops and is used when the messages are so short that answerbacks need not be checked.
For long messages, however, the receiving device must acquire each message in time with the transfer sequence, which inserts intervals of at least 20 milliseconds in between.

Types of Messages

Message	Command ID
Request data 1	RQ1 (11H)
Data set 1	DT1 (12H)

Request data #1: RQ1 (11H) (This device does not cover this procedure)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.
On receiving an RQ1 message, the remote device checks its memory for the data address and size that satisfy the request.
If it finds them and is ready for communication, the device will transmit a "Data set 1 (DT1)" message, which contains the requested data. Otherwise, the device will send out nothing.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
11H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

* The size of the requested data does not indicate the number of bytes that will make up a DT1 message, but represents the address fields where the requested data resides.
* Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
* The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
* The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Data set 1: DT1 (12H)

This message corresponds to the actual data transfer process.
Because every byte in the data is assigned a unique address, a DT1 message can convey the starting address of one or more data as well as a series of data formatted in an address- dependent order.

The MIDI standards inhibit non-real time messages from interrupting an exclusive one. This fact is inconvenient for the devices that support a "soft-through" mechanism. To maintain compatibility with such devices, Roland has limited the DT1 to 256 bytes so that an excessively long message is sent out in separate segments.

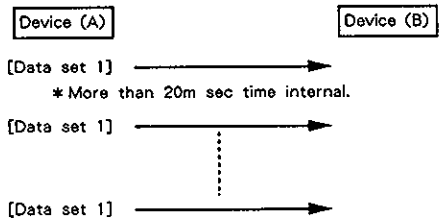
Byte	Description
F0H	Exclusive
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ddH	Data
⋮	⋮
sum	Check sum
F7H	End of exclusive

* A DT1 message is capable of providing only the valid data among those specified by an RQ1 message.
* Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
* The number of bytes comprising address data varies from one Model-ID to another.
* The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Example of Message Transactions

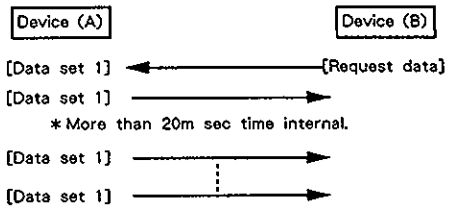
● Device A sending data to Device B

Transfer of a DT1 message is all that takes place.



● Device B requesting data from Device A

Device B sends an RQ1 message to Device A. Checking the message, Device A sends a DT1 message back to Device B.



MIDI Implementation

1. Recognized Receive Data (Sequencer Section)

1.1 Messages memorized during recording

■ Channel Voice Message

● Note Off

Status	Second	Third
8nH	kkH	vvH
9nH	kkH	00H

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
kk = Note number : 00H – 7FH (0 – 127)
vv = Velocity : 00H – 7FH (0 – 127)

* Note On (9n kk 00) is memorized as Note Off (8n kk 40).

● Note On

Status	Second	Third
9nH	kkH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
kk = Note number : 00H – 7FH (0 – 127)
vv = Velocity : 01H – 7FH (1 – 127)

● Polyphonic Key Pressure

Status	Second	Third
AnH	kkH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
kk = Note number : 00H – 7FH (0 – 127)
vv = Value : 00H – 7FH (0 – 127)

* The JW – 50 recognizes and memorizes this message when MIDI Rx Switch: Aftertouch is on.

● Control Change

○ Bank select

Status	Second	Third
BnH	00H	mmH
BnH	20H	llH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
mm, ll = Bank number : 00 00H – 7F 7FH (bank1 – bank16384)

* The JW – 50 recognizes and memorizes this message when MIDI Rx Switch: Tone Change is on.

○ Modulation

Status	Second	Third
BnH	01H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Modulation depth : 00H – 7FH (0 – 127)

* The JW – 50 recognizes and memorizes this message when MIDI Rx Switch: Modulation is on.

○ Portamento time

Status	Second	Third
BnH	05H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Portamento time : 00H – 7FH (0 – 127)

○ Data entry

Status	Second	Third
BnH	06H	mmH
BnH	26H	llH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
mm, ll = Value of the parameter specified by RPN/NRPN

○ Volume

Status	Second	Third
BnH	07H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Volume : 00H – 7FH (0 – 127)

○ Panpot

Status	Second	Third
BnH	0AH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Panpot : 00H – 7FH (0 – 127)

○ Expression

Status	Second	Third
BnH	0BH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Expression : 00H – 7FH (0 – 127)

○ Hold 1

Status	Second	Third
BnH	40H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Control value : 00H – 7FH (0 – 127)

○ Portamento

Status	Second	Third
BnH	41H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Control value : 00H – 7FH (0 – 127)

○ Sostenuto

Status	Second	Third
BnH	42H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Control value : 00H – 7FH (0 – 127)

○ Soft

Status	Second	Third
BnH	43H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Control value : 00H – 7FH (0 – 127)

○ Effect1 depth (Reverb send level)

Status	Second	Third
BnH	5BH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Control value : 00H – 7FH (0 – 127)

○ Effect3 depth (Chorus send level)

Status	Second	Third
BnH	5DH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Control value : 00H – 7FH (0 – 127)

○ NRPN MSB/LSB

Status	Second	Third
BnH	63H	mmH
BnH	62H	llH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
mm = Upper byte of the parameter number specified by NRPN
ll = Lower byte of the parameter number specified by NRPN

○ **Other control change**

Status	Second	Third
BnH	kkH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
kk = Control number : 02H – 5FH (2 – 95), 77H – 79H (98 – 119)
Having a number wihtin this range but not included other control changes.
vv = Value : 00H – 7FH (0 – 127)

● **Program Change**

Status	Second
CnH	ppH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
pp = Program number : 00H – 7FH (prog.1 – prog.128)

* The JW – 50 recognizes and memorizes Program Change when MIDI Rx Switch: Tone Change is on.

● **Channel Pressure**

Status	Second
DnH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Value : 00H – 7FH (0 – 127)

* The JW – 50 recognizes and memorizes Channel Pressure when MIDI Rx Switch: After touch is on.

● **Pitch Bend Change**

Status	Second	Third
EnH	llH	mmH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
mm, ll = Value : 00H, 00H – 7FH, 7FH (– 8192 – + 8191)

* The JW – 50 recognizes and memorizes Pitch Bend Change when MIDI Rx Switch : Pitch Bend is on.

■ **Channel Mode Messages**

● **All Sound Off**

Status	Second	Third
BnH	78H	00H

n = MIDI channel number : 0H – FH (CH 1 – CH 16)

● **Rest All Controllers**

Status	Second	Third
BnH	79H	00H

n = MIDI channel number : 0H – FH (CH 1 – CH 16)

● **Local Control**

Status	Second	Third
BnH	7AH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Value : 00H, 7FH (0, 127)

● **OMNI Off**

Status	Second	Third
BnH	7CH	00H

n = MIDI channel number : 0H – FH (CH 1 – CH 16)

* The JW – 50, upon recognizing OMNI Off, generates Note Off signal for on – note (s) of the corresponding channel and memorizes the Note Off signal.

● **OMNI On**

Status	Second	Third
BnH	7DH	00H

n = MIDI channel number : 0H – FH (CH 1 – CH 16)

* The JW – 50, upon recognizing OMNI On, processes it in the same way as OMNI Off.

● **MONO**

Status	Second	Third
BnH	7EH	mmH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
mm = No. of MONOs : 00H – 10H (0 – 16)

* The JW – 50, upon recognizing MONO, processes it in the same way as OMNI Off.

● **POLY**

Status	Second	Third
BnH	7FH	00H

n = MIDI channel number : 0H – FH (CH 1 – CH 16)

* The JW – 50, upon recognizing POLY, processes it in the same way as OMNI Off.

■ **System Exclusive Message**

Status	Data bytes
F0H	iiH, ddH,....., eeH
F7H	

F0H : System exclusive
ii = ID No. : 00H – 7FH (0 – 127)
dd,..., ee = data : 00H – 7FH (0 – 127)
F7H : EOX (End of Exclusive/System common)

* The JW – 50 recognizes and memorizes System Exclusive message when MIDI Rx Switch : Excl is on.

1.2 Messages not memorized in recording mode

■ **Channel Mode Message**

● **All Notes Off**

Status	Second	Third
BnH	7BH	00H

n = MIDI channel number : 0H – FH (CH 1 – CH 16)

* The JW – 50, upon recognizing All Notes Off, generates Note Off signal for on – note (s) of the corresponding channel and memorizes the Note Off signal. It does not memorizes All Notes Off message.

1.3 Message to be recognized for synchronization

■ **System Common Message**

● **Song Select**

Status	Second
F3H	ssH

ss = Value : 00H – 7FH (0 – 127)

* The JW – 50 recognizes this message when MIDI System Sync Clock is set at Slave or Remote.
* The JW – 50 recognizes this message in stop condition while in the Sequencer mode.

● **Song Position Pointer**

Status	Second	Third
F2H	mmH	llH

mm, ll = Value : 00H, 00H – 7FH, 7FH (0 – 16383)

* The JW – 50 recognizes this message when MIDI System Sync Clock is set at Slave or Remote.
* The JW – 50 recognizes this message in stop condition while in the Sequencer mode.

■ **System Real Time Message**

● **Timing Clock**

Status
F8H

* The JW – 50 recognizes this message when MIDI System Sync Clock is set at Slave.

● **Start**

Status
FAH

* The JW – 50 recognizes this message when MIDI System Sync Clock is set at Slave or Remote.
* The JW – 50 recognizes this message when it is in stop or record standby state.

● **Coninue**

Status
FBH

* The JW – 50 recognizes this message when MIDI System Sync Clock is set at Slave or Remote.
* The JW – 50 recognizes this message when it is in stop or record standby state.

● **Stop**

Status
FCH

* The JW – 50 recognizes this messae when MIDI System Sync Clock is set at Slave or Remote.
* The JW – 50 recognizes this message when it is in play or recording state.

2. Transmitted Data (Sequencer Section)

2.1 Message to be transmitted during play

In playback mode, the JW – 50 transmits messages it has memorized.

* The JW – 50 does not transmit this message when Track Parameter : Output Assign is INT.

2.2 Transmission of received message

The JW – 50 retransmits data as it receives when MIDI System Soft Thru is on, except for – All Note Off in the channel mode message ; System Common Message ; System Real Time Message.

2.3 Message generated for synchronization

■ **System Common Message**

● **Song Select**

Status	Second
F3H	ssH

ss = Value : 00H – 7FH (0 – 127)

* The JW – 50 transmits this message in the sequencer mode when MIDI System Sync Out is on.

● **Song Position Pointer**

Status	Second	Third
F2H	mmH	llH

mm, ll = Value : 00H, 00H – 7FH, 7FH (0 – 16383)

* The JW – 50 transmits this message in the sequencer mode when MIDI System Sync Out is on.

■ **System Real Time Message**

● **Timing Clock**

Status
F8H

* The JW – 50 transmits this message when MIDI System Sync Out is on.

● **Start**

Status
FAH

* The JW – 50 transmits this message when MIDI System Sync Out is on.

● **Continue**

Status
FBH

* The JW – 50 transmits this message when MIDI System Sync Out is on.

● **Stop**

Status
FCH

* The JW – 50 transmits this message when MIDI System Sync Out is on.

3. Recognized Receive Data (Sound Module & Keyboard Section)

■ **Channel Voice Message**

● **Note Off**

Status	Second	Third
8nH	kkH	vvH
9nH	kkH	00H

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
kk = Note number : 00H – 7FH (0 – 127)
vv = Velocity : 00H – 7FH (0 – 127)

* The JW – 50 ignores this message when Rx.Note message in the Exclusive message map is off.
* In the drum part, recognized when Rx.Note off in the Exclusive message map is ON at each instrument.
* Velocity is ignored.

● **Note On**

Status	Second	Third
9nH	kkH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
kk = Note number : 00H – 7FH (0 – 127)
vv = Velocity : 01H – 7FH (1 – 127)

* The JW – 50 ignores this message when Rx.Note message in the Exclusive message map is off.
* In the drum part, ignored when Rx.Note on in the Exclusive message map is OFF at each instrument.

● **Polyphonic Key Pressure**

Status	Second	Third
AnH	kkH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
kk = Note number : 00H – 7FH (0 – 127)
vv = Value : 00H – 7FH (0 – 127)

* The JW – 50 recognizes this message when MIDI Rx Switch : Aftertouch is On.
* The JW – 50 ignores this message when Rx.Polyphonic Key Pressure in the Exclusive message map is off.
* Effective on the function set by Controller function in the Exclusive message map has no effect if Controller function in the Exclusive message map remains initial setting.

● **Control Change**

* When Rx.Control Change in the Exclusive message map is off, the JW – 50 ignores all control change messages except for the channel mode message.

○ **Bank select**

Status	Second	Third
BnH	00H	mmH
BnH	20H	llH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
mm, ll = Bank No. : 00 00H – 7F 7FH (bank1 – bank16384)

* The JW – 50 recognizes this message when MIDI Rx Switch: Tone Change is on.
* The JW – 50 treats the lower 7 bits as 00H.
* The JW – 50 leaves the Bank select suspended until it receives the Program change.
* GS Bank number in the GS format table is decimal equivalent of the value of MSB (control number 0) in Bank select.
  Bank select 50 00H (bank 10241) correspond to the Preset Tone.
  Bank select 51 00H (bank 10369) correspond to the User Tone.

○ **Modulation**

Status	Second	Third
BnH	01H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Modulation depth : 00H – 7FH (0 – 127)

* The JW – 50 ignores this message when, MIDI Rx Switch: Modulation is off, or Rx.Modulation in the Exclusive message map is off.
* This message is effective on the function set by the Controller function in the Exclusive message map: with JW – 50 the initial setting is pitch modulation depth.

○ **Portamento time**

Status	Second	Third
BnH	05H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Portamento time : 00H – 7FH (0 – 127)

* Adjusts the pitch gliding speed when portamento is on.

○ **Data entry**

Status	Second	Third
BnH	06H	mmH
BnH	26H	llH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
mm, ll = Value of the parameter specified by RPN/NRPN

○ **Volume**

Status	Second	Third
BnH	07H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Volume : 00H – 7FH (0 – 127)

* Can be used to control the volume of the track on the MIDI channel through which the message is received.
* Ignored when Rx.Volume in the Exclusive message map is off.

○ **Panpot**

Status	Second	Third
BnH	0AH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Panpot : 00H – 7FH (0 – 127)

* Can be used to control sound localization in 127 steps with 0, 1 leftmost, 64 center and 127 rightmost.
* The JW – 50 ignores this message when Rx.Panpot in the Exclusive message map is off.

○ **Expression**

Status	Second	Third
BnH	0BH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Expression : 00H – 7FH (0 – 127)

* Can be used to control the volume of the track on the MIDI channel through which this message is received.
* The JW – 50 ignores this message when Rx.Expression in the Exclusive message map is off.

○ **Hold 1**

Status	Second	Third
BnH	40H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Control value : 00H – 7FH (0 – 127)
0 – 63 = OFF ; 64 – 127 = ON

* The JW – 50 ignores this message when Rx.Hold1 in the Exclusive message map is off.

○ **Portamento**

Status	Second	Third
BnH	41H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Control value : 00H – 7FH (0 – 127)
0 – 63 = OFF ; 64 – 127 = ON

* The JW – 50 ignores this message when Rx.Portamento in the Exclusive message map is off.

○ **Sostenuto**

Status	Second	Third
BnH	42H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Control value : 00H – 7FH (0 – 127)
0 – 63 = OFF ; 64 – 127 = ON

* The JW – 50 ignores this message when Rx.Sostenuto in the Exclusive message map is off.

○ **Soft**

Status	Second	Third
BnH	43H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Control value : 00H – 7FH (0 – 127)
0 – 63 = OFF ; 64 – 127 = ON

* The JW – 50 ignores this message when Rx.Soft in the Exclusive message map is off.

○ **Effect1 depth (Reverb send level)**

Status	Second	Third
BnH	5BH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Control value : 00H – 7FH (0 – 127)

○ **Effect3 depth (Chorus send level)**

Status	Second	Third
BnH	5DH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Control value : 00H – 7FH (0 – 127)

○ **NRPN MSB/LSB**

Status	Second	Third
BnH	63H	mmH
BnH	62H	llH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
mm = Upper byte of the parameter number specified by NRPN
ll = Lower byte of the parameter number specified by NRPN

* The JW – 50 ignores this message when Rx.NRPN in the Exclusive message map is off.
* "Rx.NRPN" is set to OFF by receiving "Turn General MIDI System On" (F0 7E 7F 09 01 F7), and it is set to ON by "GS RESET" (F0 41 10 42 12 40 00 7F 00 41 F7).

**** NRPN ****

The JW – 50 has the expanded control change area called NRPN (Non Registered Parameter Number) in which function of parameter numbers are not defined in the MIDI standard but can be defined for specific instruments.

An NRPN can be used to change a tone parameter.
Two types of parameters are used: one type of parameter specifies the relative value with respect to the preset value while the other type of parameter specifies the absolute value.

In practice, first specify the desired parameter using NRPN MSB and NRPN LSB, and then enter the data (see Data entry) that sets the value of the parameter.

NRPN MSB	NRPN LSB	Data entry MSB	Function and range
01H	08H	mmH	Vibrato rate (relative change) mm: 0EH-40H-72H (-50 - 0 - +50)
01H	09H	mmH	Vibrato depth(relative change) mm: 0EH-40H-72H (-50 - 0 - +50)
01H	0AH	mmH	Vibrato delay(relative change) mm: 0EH-40H-72H (-50 - 0 - +50)
01H	20H	mmH	TVF cutoff frequency (relative change) mm: 0EH-40H-72H (-50 - 0 - +50)
01H	21H	mmH	TVF resonance (relative change) mm: 0EH-40H-72H (-50 - 0 - +50)
01H	63H	mmH	TVF&TVA envelope attack time(relative change) mm: 0EH-40H-72H (-50 - 0 - +50)
01H	64H	mmH	TVF&TVA envelope decay time(relative change) mm: 0EH-40H-72H (-50 - 0 - +50)
01H	66H	mmH	TVF&TVA envelope release time(relative change) mm: 0EH-40H-72H (-50 - 0 - +50)
18H	rrH	mmH	Drum instrument pitch coarse(relative change) rr: Drum instrument note number mm: 00H-40H-7FH (-64 - 0 - +63)
1AH	rrH	mmH	Drum instrument TVA level(absolute change) rr: Drum instrument note number mm: 00H-7FH (0-max)
1CH	rrH	mmH	Drum instrument panpot(absolute change) rr: Drum instrument note number mm: 00H,01H-40H-7FH (random, left-center-right)
1DH	rrH	mmH	Drum instrument reverb send level(absolute change) rr: Drum instrument note number mm: 00H-7FH (0-max)
1EH	rrH	mmH	Drum instrument chorus send level(absolute change) rr: Drum instrument note number mm: 00H-7FH (0-max)

* LSB in the Data entry is ignored.
* A parameter (relative change) can be set to its maximum range but its effect is limited to some extent on a specific tone.

○ **RPN MSB/LSB**

Status	Second	Third
BnH	65H	mmH
BnH	64H	llH

n = MIDI channel number: 0H – FH (CH 1 – CH 16)
mm = Upper byte of the parameter number specified by RPN
ll = Lower byte of the parameter number specified by RPN

* The JW – 50 ignores this message when Rx.RPN in the Exclusive message map is off.

**** RPN ****

The JW – 50 has the expanded control change area called RPN (Registered Parameter Number) in which control function of parameter numbers are defined by the MIDI standard.

An RPN can be used to change a parameter on an instrument.
In practice, first specify the desired parameter using RPN MSB and RPN LSB, and then enter the data (see Data entry) that sets the value of the parameter.

The RPNs that can be recognized by the JW – 50 are: Pitch bend sensitivity (RPN # 0), Master fine tune (RPN # 1), master coarse tune (RPN # 2) and RPN reset (RPN # 16383).

RPN MSB	RPN LSB	Data entry MSB	Data entry LSB	Description
00H	00H	mmH	---	Pitch bend sensitivity mm: 00H-18H (0-24 semitones) ll: Ignored Can be specified up to 2 octaves in semitone steps. Default: two semitones
00H	01H	mmH	llH	Master fine tune mm, ll: 00H, 00H-40H, 00H-7FH, 7FH (-8192*100/8192 - 0 - +8191*100/8192 cents)
00H	02H	mmH	---	Master coarse tune mm: 28H-40H-58H (-24 - 0 - +24 semitone) ll: Ignored
7FH	7FH	---	---	RPN reset None of RPN and NRPN numbers are specified. Internal settings remain unchanged. mm, ll: Ignored

● **Program Change**

Status	Second
CnH	ppH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
pp = Program number : 00H – 7FH (prog.1 – prog.128)

* Ignored when, MIDI Rx Switch: Tone Change is off.
* Ignored when, Rx.Program change in the Exclusive message map is off.
* In the drum part, JW – 50 doesn't receive Program change message when the is 129 – 16384 (the value of the control change 00H is not 00H).

● **Channel Pressure**

Status	Second
DnH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Value : 00H – 7FH (0 – 127)

* Recognized when MIDI Rx Switch: Aftertouch is on.
* Ignored if Rx. Channel pressure in the Exclusive message map is off.
* Effective on the function set by Controller function in the Exclusive message map. With the JW – 50 default setting is TVF Cutoff frequen (except ch.10).
* The GS or GM System On reset changes the settings made by Controller function, disabling this message.

● **Pitch Bend Change**

Status	Second	Third
EnH	llH	mmH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
mm, ll = Value : 00H, 00H – 7FH, 7FH (– 8192 – + 8191)

* Recognized when MIDI Rx Switch: Pitch Bend is on.
* Ignored if Rx. Pitch bend change in the Exclusive message map is off.
* Effective on the function set by Controller function in the Exclusive message map. The default setting on the JW – 50 is pitch bend.

■ **Channel Mode Messages**

● **All Sound Off**

Status	Second	Third
BnH	78H	00H

n = MIDI channel number : 0H – FH (CH 1 – CH 16)

* Turns off all on – notes in the corresponding MIDI channel. Channel message is kept unchanged.

● **Rest All Controllers**

Status	Second	Third
BnH	79H	00H

n = MIDI channel number : 0H – FH (CH 1 – CH 16)

* The JW – 50, upon recoginzing this message, changes the following controller setting.

Controller	Setting
Pitch bend change	+/-0(center)
Polyphonic key pressure	0(off)
Channel pressure	0(off)
Modulation	0 (off)
Expression	127 (max)
Hold 1	0 (off)
Portamento	0 (off)
Soft	0 (off)
Sostenuto	0 (off)
RPN	No number is set: no internal data change
NRPN	No number is set: no internal data change

● **All Note Off**

Status	Second	Third
BnH	7BH	00H

n = MIDI channel number : 0H – FH (CH 1 – CH 16)

* Turns off all on – notes on that channel. Exception: All Note Off is kept disabled until Hold 1 or sostenuto is released, if on.

● **OMNI Off**

Status	Second	Third
BnH	7CH	00H

n = MIDI channel number : 0H – FH (CH 1 – CH 16)

* The JW – 50 recognizes OMNI Off as All Note Off.

● **OMNI On**

Status	Second	Third
BnH	7DH	00H

n = MIDI channel number : 0H – FH (CH 1 – CH 16)

* The JW – 50 recognizes OMNI On as All Note Off but not OMNI On.

● **MONO**

Status	Second	Third
BnH	7EH	mmH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
mm = No. of MONOs : 00H – 10H (0 – 16)

* The JW – 50 acts as if it receives All Sound Off and sets the corresponding channel to Mode 4 (M = 1) when value mm is within 00H – 10H.

● **POLY**

Status	Second	Third
BnH	7FH	00H

n = MIDI channel number : 0H – FH (CH 1 – CH 16)

* The JW – 50 acts as if it receives All Sound Off and sets the corresponding channel to Mode 3.

■ **System Real Time Message**

● **Active Sensing**

Status
FEH

* Once the JW – 50 receives Active Sensing, it measures the time delay from the previous message to the next message. If it does not sense this message by 330ms, acts as if it receives All Note Off and stops measuring delay time.

■ **System Exclusive Message**

Status	Data bytes
F0H	iiH, ddH,....., eeH
F7H	

F0H : System exclusive
ii = ID No. : 41H (65), 7EH (126)
dd,..., ee = data : 00H – 7FH (0 – 127)
F7H : EOX (End of Exclusive/System common)

* Recognized when MIDI Rx Switch: Excl is on.

For details, see Section 5 System Exclusive Message.

4. Transmitted Data (Sound Module & Keyboard Section)

■ **Channel Voice Message**

● **Note Off**

Status	Second	Third
8nH	kkH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
kk = Note number : 00H – 7FH (0 – 127)
vv = Velocity : 00H – 7FH (0 – 127)

* The JW – 50 does not send this message if Track Parameter: Output Assign is Int.

● **Note On**

Status	Second	Third
9nH	kkH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
kk = Note number : 00H – 7FH (0 – 127)
vv = Velocity : 01H – 7FH (1 – 127)

* The JW – 50 does not send this message if Track Parameter: Output Assign is Int.

● **Control Change**

○ **Bank select**

Status	Second	Third
BnH	00H	mmH
BnH	20H	llH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
mm, ll = Bank number : 50 00H (bank 10241) Preset Tone
51 00H (bank 10369) User Tone

* This massage is transmitted when the tone is changed.
* The JW – 50 will not send this message if Track Parameter: Output Assign is Int.

○ **Modulation**

Status	Second	Third
BnH	01H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Modulation depth : 00H – 7FH (0 – 127)

* This message is transmitted when the Modulation Lever is operated.
* The JW – 50 sends this message when Tune/Func2 Keyboard Switch Mod is on.
* The JW – 50 does not send this message if Track Parameter: Output Assign is Int.

○ **Data entry**

Status	Second	Third
BnH	06H	mmH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
mm = Value of the parameter specified by RPN.

* This message is transmitted when the Bend Range is changed.
* The JW – 50 does not send this message if Track Parameter: Output Assign is Int .

○ **Volume**

Status	Second	Third
BnH	07H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Volume : 00H – 7FH (0 – 127)

* This message is transmitted when the Compu Mixer function is used.
* The JW – 50 does not send this message if Track Parameter: Output Assign is Int.

○ **Panpot**

Status	Second	Third
BnH	0AH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Panpot : 00H – 7FH (0 – 127)

* This message is transmitted when the Compu Mixer function is used.
* The JW – 50 does not send this message if Track Parameter: Output Assign is Int.

○ **Expression**

Status	Second	Third
BnH	0BH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Expression : 00H – 7FH (0 – 127)

* This message is transmitted when Tune/Func2 Ext Control Assign is Expression.
* The JW – 50 does not send this message if Track Parameter: Output Assign is Int.

○ **Hold 1**

Status	Second	Third
BnH	40H	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Control value : 00H – 7FH (0 – 127)

* This message is transmitted when the Hold pedal is pressed.
* The JW – 50 does not send this message if Track Parameter: Output Assign is Int.

○ **RPN MSB/LSB**

Status	Second	Third
BnH	65H	mmH
BnH	64H	llH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
mm = Upper byte of the parameter number specified by RPN
ll = Lower byte of the parameter number specified by RPN

**** RPN ****
The JW – 50 has the expanded control change area called RPN (Registered Parameter Number) in which control function of parameter numbers are defined by the MIDI standard.

An RPN can be used to change a parameter on an instrument.
In practice, first specify the desired parameter using RPN MSB and RPN LSB, and then enter the data (see Data entry) that sets the value of the parameter.

The RPNs that can be transmitted by the JW – 50 are: Pitch bend sensitivity (RPN # 0), RPN reset (RPN # 16383).

RPN MSB LSB	Data entry MSB LSB	Description
00H 00H	mmH ---	Pitch bend sensitivity mm: 00H-18H (0-24 semitones) ll: Ignored Can be specified up to 2 octaves in semitone steps. Default: two semitones
7FH 7FH	--- ---	RPN reset None of RPN and NRPN numbers are specified. Internal settings remain unchanged. mm, ll: Ignored

* This message is transmitted when the Bend Range is changed. (mm = 00H, ll = 00H)
* The JW – 50 does not send this message if Track Parameter: Output Assign is Int.

● **Program Change**

Status	Second
CnH	ppH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
pp = Program number : 00H – 7FH (prog.1 – prog.128)

* This massage is transmitted when the tone is changed.
* The JW – 50 does not send this message if Track Parameter: Output Assign is Int.

● **Channel Pressure**

Status	Second
DnH	vvH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
vv = Value : 00H – 7FH (0 – 127)

* The JW – 50 sends this message when Tune/Func2 Keyboard Switch C.After is on.
* This message is transmitted when a keyboard is pressed.
* The JW – 50 does not send this message if Track Parameter: Output Assign is Int.

● **Pitch Bend Change**

Status	Second	Third
EnH	llH	mmH

n = MIDI channel number : 0H – FH (CH 1 – CH 16)
mm, ll = Value : 00H, 00H – 7FH, 7FH (– 8192 – + 8191)

* The JW – 50 sends this message when Tune/Func2 Keyboard Switch P.Bend is on.
* This message is transmitted when the Pitch Bend Lever is operated.
* The JW – 50 does not send this message if Track Parameter: Output Assign is Int.

■ **System Real Time Message**

● **Active Sensing**

Status
FEH

* The JW – 50 sends this message when MIDI System Active Sensing Out is on.

5. System Exclusive Message for JW-50 (Sound Module & Keyboard Section)

The System Exclusive Messages recognized by the JW – 50 include those related to mode setting and data set (DT1).

Exclusive Message can be used to change modes of sound source and parameter sets of the JW – 50.
Available model ID for the sound source of the JW – 50 in System Exclusive Message is 42H (GS) and the device ID is 10H.

■ **System Exclusive Messages Related to Mode Setting**

● **GS Reset**

Status	Data Byte	Status
F0H	41H, 10H, 42H, 12H, 40H, 00H, 7FH, 00H, 41H,	F7H

* Receiving this message, all the internal parameters are set to the GS default setting, and can receive GS MIDI data correctly. Rx. NRPN in the Exclusive message map is set to ON by receiving "GS Reset."
* Execution time of this message is approx. 50ms. Avoid sending the next message during this execution time.

● **Exit GS mode**

Status	Data Byte	Status
F0H	41H, 10H, 42H, 12H, 40H, 00H, 7FH, 7FH, 42H,	F7

* Change mode from GS to the default mode of JW – 50.
* It takes about 200ms to execute this message. Please take a rest before the next messages.

● **GM System On**

Status	Data Byte	Status
F0H	7EH, 7FH, 09H, 01H,	F7H

* Receiving this message, all the internal parameters are set to the General MIDI Level 1 default setting even if in the any mode, and can play the General MIDI score (level 1) correctly. Rx. NRPN in the Exclusive message map is set to OFF by receiving "GM System On."
* Execution time of this message is approx. 50ms. Avoid sending the next message during this execution time.

● **GM System off**

Status	Data Byte	Status
F0H	7EH, 7FH, 09H, 02H,	F7H

* Change mode from GS to the default mode of JW - 50.
* It takes about 200ms to execute this message. Please take a rest before the next messages.

■ **Exclusive message for Data set**

● **Data set DT1 (12H)**

Byte	Description
F0H	Exclusive status
41H	Manufacture's ID (Roland)
10H	Device ID
42H	Model ID (GS)
12H	Command ID (DT1)
aaH	Address MSB
bbH	Address
ccH	Address LSB
ddH	Data
|	|
eeH	Data
sum	Check sum
F7H	EOX (End of exclusive)

6. Parameter Address Map

The address and size are described with 7 - bit hexadecimal.

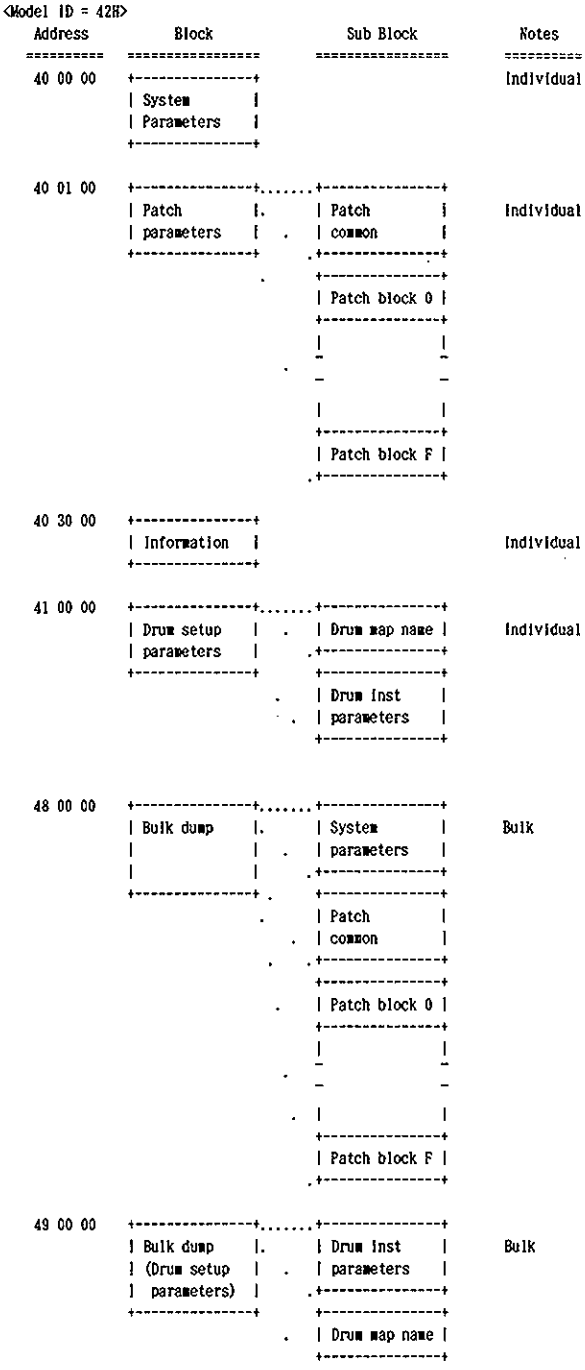
Address	MSB		LSB
Binary	0aaa aaaa	0bbb bbbb	0ccc cccc
Hexadecimal	AA	BB	CC

Size	MSB		LSB
Binary	0sss ssss	0ttt tttt	0uuu uuuu
Hexadecimal	SS	TT	UU

■ **Address block map**

Coarse address map of the exclusive communication is shown below ;

<Model ID = 42H>



Notes : Using address of individual parameter

One system exclusive message "F0 ..... F7" can only have one parameter.

You cannot use any address having " #" for the top address in a system exclusive message.
< Model ID = 42H >

[SYSTEM PARAMETERS]

Address(H)	SIZE(H)	Data(H)	Parameter	Description	Default Value(H)
40 00 00	00 00 04	0018 - 07E8	MASTER TUNE	-100.0 - +100.0 [cent]	00 04 00 00
40 00 01#				Use nibblized data.	
40 00 02#					
40 00 03#					
40 00 04	00 00 01	00 - 7F	MASTER VOLUME	0 - 127	7F
40 00 05	00 00 01	28 - 58	MASTER KEY-SHIFT	-24 - +24 semitones	40
40 00 06	00 00 01	00 - 7F	MASTER PAN		40
40 00 7F	00 00 01	00, 7F	00: ENTER GS MODE System reset and set all internal parameters to the GS setting. 7F: EXIT GS MODE INitialized to the factory preset data		

For example : If you set +100.0 cents for master tune, you must send the message as follows.
F0 41 10 42 12 40 00 00 00 07 0E 08 sum(23) F7

If you set 100 (decimal) for master volume, you must send the message as follows.
F0 41 10 42 12 40 00 04 64 sum(58) F7

[PATCH PARAMETER]

*n...block number (0 - F), Part 1(default MIDIch = 1) n=1
: : :
Part 9(default MIDIch = 9) n=9
Part10(default MIDIch =10) n=0
Part11(default MIDIch =11) n=A
: : :
Part16(default MIDIch =16) n=F

*x...MIDI channel number (0 - F).

Address(H)	SIZE(H)	Data(H)	Parameter	Description	Default Value (H)
40 01 10	00 00 10	00 - 17	VOICE RESERVE	Part 10(Drums)	02
40 01 11#				Part 1	02
40 01 12#				Part 2	02
40 01 13#				Part 3	02
40 01 14#				Part 4	02
40 01 15#				Part 5	02
40 01 16#				Part 6	02
40 01 17#				Part 7	02
40 01 18#				Part 8	00
40 01 19#				Part 9	00
40 01 1A#				Part 11	02
40 01 1B#				Part 12	02
40 01 1C#				Part 13	02
40 01 1D#				Part 14	02
40 01 1E#				Part 15	00
40 01 1F#				Part 16	00

The sum of voice reserves must be less than or equal to the voice number of the generator. For example, 17H is the maximum value for a 24 voice sound generetor.

40 01 30	00 00 01	00 - 07	REVERB MACRO	00: Room 1 01: Room 2 02: Room 3 03: Hall 1 04: Hall 2 05: Plate 06: Delay 07: Panning Delay	04
40 01 31	00 00 01	00 - 07	REVERB CHARACTER		04
40 01 32	00 00 01	00 - 07	REVERB PRE-LPF		00
40 01 33	00 00 01	00 - 7F	REVERB LEVEL		40
40 01 34	00 00 01	00 - 7F	REVERB TIME		40
40 01 35	00 00 01	00 - 7F	REVERB DELAY FEEDBACK		00
40 01 36	00 00 01	00 - 7F	REVERB SEND LEVEL TO CHORUS		00

40 01 38	00 00 01	00 - 07	CHORUS MACRO	00: Chorus 1 01: Chorus 2 02: Chorus 3 03: Chorus 4 04: Feedback Chorus 05: Flanger 06: Short Delay 07: Short Delay(FB)	02
40 01 39	00 00 01	00 - 07	CHORUS PRE-LPF		00
40 01 3A	00 00 01	00 - 7F	CHORUS LEVEL		40
40 01 3B	00 00 01	00 - 7F	CHORUS FEEDBACK		08
40 01 3C	00 00 01	00 - 7F	CHORUS DELAY		50
40 01 3D	00 00 01	00 - 7F	CHORUS RATE		03
40 01 3E	00 00 01	00 - 7F	CHORUS DEPTH		13
40 01 3F	00 00 01	00 - 7F	CHORUS SEND LEVEL TO REVERB		00
40 1n 00	00 00 02	00 - 7F	TONE NUMBER	CC#00 VALUE	00
40 1n 01#		00 - 7F		P.C. VALUE	00
40 1n 02	00 00 01	00 - 10	Rx. CHANNEL	1 - 16,OFF	same as the Part#
40 1n 03	00 00 01	00 - 01	Rx. PITCH BEND	OFF / ON	01
40 1n 04	00 00 01	00 - 01	Rx. CH PRESSURE(CAf)	OFF / ON	01
40 1n 05	00 00 01	00 - 01	Rx. PROGRAM CHANGE	OFF / ON	01
40 1n 06	00 00 01	00 - 01	Rx. CONTROL CHANGE	OFF / ON	01
40 1n 07	00 00 01	00 - 01	Rx. POLY PRESSURE(PAf)	OFF / ON	01
40 1n 08	00 00 01	00 - 01	Rx. NOTE MESSAGE	OFF / ON	01
40 1n 09	00 00 01	00 - 01	Rx. RPN	OFF / ON	01
40 1n 0A	00 00 01	00 - 01	Rx. NRPN	OFF / ON	01
40 1n 0B	00 00 01	00 - 01	Rx. MODULATION	OFF / ON	01
40 1n 0C	00 00 01	00 - 01	Rx. VOLUME	OFF / ON	01
40 1n 0D	00 00 01	00 - 01	Rx. PANPOT	OFF / ON	01
40 1n 0E	00 00 01	00 - 01	Rx. EXPRESSION	OFF / ON	01
40 1n 0F	00 00 01	00 - 01	Rx. HOLD1	OFF / ON	01
40 1n 10	00 00 01	00 - 01	Rx. PORTAMENTO	OFF / ON	01
40 1n 11	00 00 01	00 - 01	Rx. SOSTENUTO	OFF / ON	01
40 1n 12	00 00 01	00 - 01	Rx. SOFT	OFF / ON	01

The ON/OFF setting of the receiving switch (40 1n 03 - 40 1n 12) must be executed while the unit is not sounding.

40 1n 13	00 00 01	00 - 01	MONO/POLY MODE	Mono / Poly (=Bx 7E 01 / Bx 7F 00)	01
40 1n 14	00 00 01	00 - 02	ASSIGN MODE	0 = SINGLE 1 = LIMITED-MULTI 2 = FULL-MULTI	00 at n=0 01 at n≠0
40 1n 15	00 00 01	00 - 02	USE FOR RHYTHM PART	0 = OFF 1 = MAP1 2 = MAP2	00 at n≠0 01 at n=0
40 1n 16	00 00 01	28 - 58	PITCH KEY SHIFT	-24 - +24 [semitone]	40
40 1n 17	00 00 02	08 - F8	PITCH OFFSET FINE	-12.0 - +12.0 [Hz]	08 00
40 1n 18#				Use nibblized data.	
40 1n 19	00 00 01	00 - 7F	PART LEVEL	0 - 127 (=Bx 07 vv)	64
40 1n 1A	00 00 01	00 - 7F	VELOCITY SENSE DEPTH	0 - 127	40
40 1n 1B	00 00 01	00 - 7F	VELOCITY SENSE OFFSET	0 - 127	40
40 1n 1C	00 00 01	00 - 7F	PART PANPOT	Random, -63(LEFT) - +63(RIGHT) (=Bx 0A vv, except random)	40
40 1n 1D	00 00 01	00 - 7F	KEY RANGE LOW	C-1 - G9	00
40 1n 1E	00 00 01	00 - 7F	KEY RANGE HIGH	C-1 - G9	7F
40 1n 1F	00 00 01	00 - 5F	CC1 CONTROLLER NUMBER	0 - 95	10
40 1n 20	00 00 01	00 - 5F	CC2 CONTROLLER NUMBER	0 - 95	11
40 1n 21	00 00 01	00 - 7F	CHORUS SEND DEPTH	0 - 127 (=Bx 5D vv)	00
40 1n 22	00 00 01	00 - 7F	REVERB SEND DEPTH	0 - 12 (=Bx 5B vv)	28
40 1n 30	00 00 01	0E - 72	TONE MODIFY 1 Vibrato rate	-50 - +50 (=Bx 63 01 62 08 06 vv)	40
40 1n 31	00 00 01	0E - 72	TONE MODIFY 2 Vibrato depth	-50 - +50 (=Bx 63 01 62 09 06 vv)	40
40 1n 32	00 00 01	0E - 72	TONE MODIFY 3 TVF cutoff freq.	-50 - +50 (=Bx 63 01 62 20 06 vv)	40
40 1n 33	00 00 01	0E - 72	TONE MODIFY 4 TVF resonance	-50 - +50 (=Bx 63 01 62 21 06 vv)	40
40 1n 34	00 00 01	0E - 72	TONE MODIFY 5 TVF&TVA Env. attack	-50 - +50 (=Bx 63 01 62 63 06 vv)	40
40 1n 35	00 00 01	0E - 72	TONE MODIFY 6 TVF&TVA Env. decay	-50 - +50 (=Bx 63 01 62 64 06 vv)	40
40 1n 36	00 00 01	0E - 72	TONE MODIFY 7 TVF&TVA Env. release	-50 - +50 (=Bx 63 01 62 66 06 vv)	40
40 1n 37	00 00 01	0E - 72	TONE MODIFY 8 Vibrato delay	-50 - +50 (=Bx 63 01 62 0A 06 vv)	40

40 1n 40	00 00 0C	00 - 7F	SCALE TUNING C	-64 - +63 [cent]	40
40 1n 41#		00 - 7F	SCALE TUNING C#	-64 - +63 [cent]	40
40 1n 42#		00 - 7F	SCALE TUNING D	-64 - +63 [cent]	40
40 1n 43#		00 - 7F	SCALE TUNING D#	-64 - +63 [cent]	40
40 1n 44#		00 - 7F	SCALE TUNING E	-64 - +63 [cent]	40
40 1n 45#		00 - 7F	SCALE TUNING F	-64 - +63 [cent]	40
40 1n 46#		00 - 7F	SCALE TUNING F#	-64 - +63 [cent]	40
40 1n 47#		00 - 7F	SCALE TUNING G	-64 - +63 [cent]	40
40 1n 48#		00 - 7F	SCALE TUNING G#	-64 - +63 [cent]	40
40 1n 49#		00 - 7F	SCALE TUNING A	-64 - +63 [cent]	40
40 1n 4A#		00 - 7F	SCALE TUNING A#	-64 - +63 [cent]	40
40 1n 4B#		00 - 7F	SCALE TUNING B	-64 - +63 [cent]	40

40 2n 00	00 00 01	28 - 58	MOD PITCH CONTROL	-24 - +24 [semitone]	40
40 2n 01	00 00 01	00 - 7F	MOD TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40
40 2n 02	00 00 01	00 - 7F	MOD AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40
40 2n 03	00 00 01	00 - 7F	MOD LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2n 04	00 00 01	00 - 7F	MOD LFO1 PITCH DEPTH	0 - 600 [cent]	0A
40 2n 05	00 00 01	00 - 7F	MOD LFO1 TVF DEPTH	0 - 2400 [cent]	00
40 2n 06	00 00 01	00 - 7F	MOD LFO1 TVA DEPTH	0 - 100.0 [%]	00
40 2n 07	00 00 01	00 - 7F	MOD LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2n 08	00 00 01	00 - 7F	MOD LFO2 PITCH DEPTH	0 - 600 [cent]	00
40 2n 09	00 00 01	00 - 7F	MOD LFO2 TVF DEPTH	0 - 2400 [cent]	00
40 2n 0A	00 00 01	00 - 7F	MOD LFO2 TVA DEPTH	0 - 100.0 [%]	00
40 2n 10	00 00 01	40 - 58	BEND PITCH CONTROL	0 - 24 [semitone]	42
40 2n 11	00 00 01	00 - 7F	BEND TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40
40 2n 12	00 00 01	00 - 7F	BEND AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40
40 2n 13	00 00 01	00 - 7F	BEND LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2n 14	00 00 01	00 - 7F	BEND LFO1 PITCH DEPTH	0 - 600 [cent]	00
40 2n 15	00 00 01	00 - 7F	BEND LFO1 TVF DEPTH	0 - 2400 [cent]	00
40 2n 16	00 00 01	00 - 7F	BEND LFO1 TVA DEPTH	0 - 100.0 [%]	00
40 2n 17	00 00 01	00 - 7F	BEND LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2n 18	00 00 01	00 - 7F	BEND LFO2 PITCH DEPTH	0 - 600 [cent]	00
40 2n 19	00 00 01	00 - 7F	BEND LFO2 TVF DEPTH	0 - 2400 [cent]	00
40 2n 1A	00 00 01	00 - 7F	BEND LFO2 TVA DEPTH	0 - 100.0 [%]	00
40 2n 20	00 00 01	28 - 58	CAf PITCH CONTROL	-24 - +24 [semitone]	40
40 2n 21	00 00 01	00 - 7F	CAf TVF CUTOFF CONTROL	-9600 - +9600 [cent]	7F(n≠0) 40(n=0)
40 2n 22	00 00 01	00 - 7F	CAf AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40
40 2n 23	00 00 01	00 - 7F	CAf LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2n 24	00 00 01	00 - 7F	CAf LFO1 PITCH DEPTH	0 - 600 [cent]	00
40 2n 25	00 00 01	00 - 7F	CAf LFO1 TVF DEPTH	0 - 2400 [cent]	00
40 2n 26	00 00 01	00 - 7F	CAf LFO1 TVA DEPTH	0 - 100.0 [%]	00
40 2n 27	00 00 01	00 - 7F	CAf LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2n 28	00 00 01	00 - 7F	CAf LFO2 PITCH DEPTH	0 - 600 [cent]	00
40 2n 29	00 00 01	00 - 7F	CAf LFO2 TVF DEPTH	0 - 2400 [cent]	00
40 2n 2A	00 00 01	00 - 7F	CAf LFO2 TVA DEPTH	0 - 100.0 [%]	00
40 2n 30	00 00 01	28 - 58	PAf PITCH CONTROL	-24 - +24 [semitone]	40
40 2n 31	00 00 01	00 - 7F	PAf TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40
40 2n 32	00 00 01	00 - 7F	PAf AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40
40 2n 33	00 00 01	00 - 7F	PAf LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2n 34	00 00 01	00 - 7F	PAf LFO1 PITCH DEPTH	0 - 600 [cent]	00
40 2n 35	00 00 01	00 - 7F	PAf LFO1 TVF DEPTH	0 - 2400 [cent]	00
40 2n 36	00 00 01	00 - 7F	PAf LFO1 TVA DEPTH	0 - 100.0 [%]	00
40 2n 37	00 00 01	00 - 7F	PAf LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2n 38	00 00 01	00 - 7F	PAf LFO2 PITCH DEPTH	0 - 600 [cent]	00
40 2n 39	00 00 01	00 - 7F	PAf LFO2 TVF DEPTH	0 - 2400 [cent]	00
40 2n 3A	00 00 01	00 - 7F	PAf LFO2 TVA DEPTH	0 - 100.0 [%]	00
40 2n 40	00 00 01	28 - 58	CC1 PITCH CONTROL	-24 - +24 [semitone]	40
40 2n 41	00 00 01	00 - 7F	CC1 TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40
40 2n 42	00 00 01	00 - 7F	CC1 AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40
40 2n 43	00 00 01	00 - 7F	CC1 LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2n 44	00 00 01	00 - 7F	CC1 LFO1 PITCH DEPTH	0 - 600 [cent]	00
40 2n 45	00 00 01	00 - 7F	CC1 LFO1 TVF DEPTH	0 - 2400 [cent]	00
40 2n 46	00 00 01	00 - 7F	CC1 LFO1 TVA DEPTH	0 - 100.0 [%]	00
40 2n 47	00 00 01	00 - 7F	CC1 LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2n 48	00 00 01	00 - 7F	CC1 LFO2 PITCH DEPTH	0 - 600 [cent]	00
40 2n 49	00 00 01	00 - 7F	CC1 LFO2 TVF DEPTH	0 - 2400 [cent]	00
40 2n 4A	00 00 01	00 - 7F	CC1 LFO2 TVA DEPTH	0 - 100.0 [%]	00
40 2n 50	00 00 01	28 - 58	CC2 PITCH CONTROL	-24 - +24 [semitone]	40
40 2n 51	00 00 01	00 - 7F	CC2 TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40
40 2n 52	00 00 01	00 - 7F	CC2 AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40
40 2n 53	00 00 01	00 - 7F	CC2 LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2n 54	00 00 01	00 - 7F	CC2 LFO1 PITCH DEPTH	0 - 600 [cent]	00
40 2n 55	00 00 01	00 - 7F	CC2 LFO1 TVF DEPTH	0 - 2400 [cent]	00
40 2n 56	00 00 01	00 - 7F	CC2 LFO1 TVA DEPTH	0 - 100.0 [%]	00
40 2n 57	00 00 01	00 - 7F	CC2 LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2n 58	00 00 01	00 - 7F	CC2 LFO2 PITCH DEPTH	0 - 600 [cent]	00
40 2n 59	00 00 01	00 - 7F	CC2 LFO2 TVF DEPTH	0 - 2400 [cent]	00
40 2n 5A	00 00 01	00 - 7F	CC2 LFO2 TVA DEPTH	0 - 100.0 [%]	00

The LFO is used for creating the internal sounds. In some cases, changing the parameters of LFO1 and LFO2 will not greatly affect the sound.

[DRUM SETUP PARAMETERS]

*m:Map number (0 = MAP1, 1 = MAP2)
*rr:drums part key number (00 - 7F)

Address(H)	SIZE(H)	Data(H)	Parameter	Description
41 m0 00	00 00 0C	20 - 7F	DRUMS MAP NAME	ASCII Character
| #				
41 m0 0B#				
41 m1 rr	00 00 01	00 - 7F	PLAY KEY NUMBER	Pitch coarse
41 m2 rr	00 00 01	00 - 7F	LEVEL	TVA level (=Bx 63 1A 62 rr 06 vv)
41 m3 rr	00 00 01	00 - 7F	ASSIGN GROUP NUMBER	Non, 1 - 127
41 m4 rr	00 00 01	00 - 7F	PANPOT	Random, -63(LEFT) - +63(RIGHT) (=Bx 63 1C 62 rr 06 vv)
41 m5 rr	00 00 01	00 - 7F	REVERB DEPTH	0.0 - 1.0 Multiplicand of the part reverb depth (=Bx 63 1D 62 rr 06 vv)
41 m6 rr	00 00 01	00 - 7F	CHORUS DEPTH	0.0 - 1.0 Multiplicand of the part chorus depth (=Bx 63 1E 62 rr 06 vv)
41 m7 rr	00 00 01	00 - 01	Rx. NOTE OFF	OFF / ON
41 m8 rr	00 00 01	00 - 01	Rx. NOTE ON	OFF / ON

When you change drum sets, all values of the DRUM SETUP PARAMETERS will be initialized.

[BULK DUMP]
1 packet = 128 byte(MIDI)

- - - --- ALL (8 + 64 + (112 * 16) = 0x748 byte)
- - - --- 0x748 * 2(nibblize) = 1D 10 (MIDI)

Address(H)	SIZE(H)	Data(H)	Parameter	Description
48 00 00	00 1D 10			
| #				30 packets
48 1D 0F#				

- - - --- SYSTEM PARAMETER (8 = 0x08 byte)
- - - --- 0x08 * 2(nibblize) = 00 10 (MIDI)

Address(H)	SIZE(H)	Data(H)	Parameter	Description
48 00 00	00 00 10			
| #				1 packet
48 00 0F#				

- - - --- PATCH COMMON (64 = 0x40 byte)
- - - --- 0x40 * 2(nibblize) = 01 00 (MIDI)

Address(H)	SIZE(H)	Data(H)	Parameter	Description
48 00 10	00 01 00			
| #				1 packet
48 01 0F#				

- - - - --- PATCH PART (112 = 0x70 byte)
- - - - --- 0x70 * 2(nibblize) = 01 60 (MIDI)

Address(H)	SIZE(H)	Data(H)	Parameter	Description
48 01 10	00 01 60			
| #		block 0		2 packets
48 02 6F#				
48 02 70	00 01 60			
| #		block 1		2 packets
48 04 4F#				
48 04 50	00 01 60			
| #		block 2		2 packets
48 06 2F#				
48 06 30	00 01 60			
| #		block 3		2 packets
48 08 0F#				
48 08 10	00 01 60			
| #		block 4		2 packets
48 09 6F#				
48 09 70	00 01 60			
| #		block 5		2 packets
48 0B 4F#				
48 0B 50	00 01 60			
| #		block 6		2 packets
48 0D 2F#				
48 0D 30	00 01 60			
| #		block 7		2 packets
48 0F 0F#				
48 0F 10	00 01 60			
| #		block 8		2 packets
48 10 6F#				
48 10 70	00 01 60			
| #		block 9		2 packets
48 12 4F#				
48 12 50	00 01 60			
| #		block A		2 packets
48 14 2F#				
48 14 30	00 01 60			
| #		block B		2 packets
48 16 0F#				
48 16 10	00 01 60			
| #		block C		2 packets
48 17 6F#				
48 17 70	00 01 60			
| #		block D		2 packets
48 19 4F#				
48 19 50	00 01 60			
| #		block E		2 packets
48 1B 2F#				
48 1B 30	00 01 60			
| #		block F		2 packets
48 1D 0F#				

----- DRUM MAP PARAMETER(128 = 80h)
0x80 * 2(nibblize) = 00 02 00 (MIDI)

Address(H)	SIZE(H)		
49 m0 00	00 02 00		
|		PLAY NOTE NUMBER	2 packets
49 m1 7F			
49 m2 00	00 02 00		
|		LEVEL	2 packets
49 m3 7F			
49 m4 00	00 02 00		
|		ASSIGN GROUP	2 packets
49 m5 7F		NUMBER	
49 m6 00	00 02 00		
|		PANPOT	2 packets
49 m7 7F			
49 m8 00	00 02 00		
|		REVERB DEPTH	2 packets
49 m9 7F			
49 mA 00	00 02 00		
|		CHORUS DEPTH	2 packets
49 mB 7F			
49 mC 00	00 02 00		
|		Rx. NOTE ON/OFF	2 packets
49 mD 7F			
49 mE 00	00 00 18		
|		DRUM MAP NAME	1 packet
49 mE 17			

m: map number (0 - 1)

MUSIC WORKSTATION (Sequencer Section)

Model JW-50

MIDI Implementation Chart

Date : Apr. 13 1992

Version : 1.00

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default	1 – 16	1 – 16	There is not a Basic Channel.
	Changed	×	1 – 16	
Mode	Default	Mode 3	○	
	Message	Mode 3, 4	○	Transmitted upon changing song.
	Altered	*********		
Note Number		0 – 127	0 – 127	
	True Voice	*********	0 – 127	
Velocity	Note ON	○ *1	○	
	Note OFF	○ *1	○	
After Touch	Key's	○ *1	○ *1	
	Ch's	○ *1	○ *1	
Pitch Bend		○ *1	○ *1	
Control Change	0, 32	○ *1	○ *1	Bank Select
	1	○ *1	○ *1	Modulation
	5	○ *1	○	Portamento Time
	6, 38	○ *1	○	Data Entry
	7	○ *1	○	Volume
	10	○ *1	○	Panpot
	11	○ *1	○	Expression
	64	○ *1	○	Hold 1
	65	○ *1	○	Portamento
	66	○ *1	○	Sostenuto
	67	○ *1	○	Soft
	91	○ *1	○ (Reverb)	Effect1 depth
	93	○ *1	○ (Chorus)	Effect3 depth
	other (2 – 95)	○ *1	○	
	98, 99	○ *1	○	NRPN LSB, MSB
	100, 101	○ *1	○	RPN LSB, MSB
	102 – 119	○ *1	○	
	120	○ *1	○	All Sounds Off
	121	○ *1	○	Reset All Controllers
Prog Change		○ *1	○ *1	Program Number 1-128
	True #	*********	0 – 127	
System Exclusive		○ *1	○ *1	
System Common	Song Pos	○ *1	○ *1	
	Song Sel	○ *1	○ *1	
	Tune	×	×	
System Real Time	Clock	○ *1	○ *1	
	Commands	○ *1	○ *1	
Aux Messages	Local ON/OFF	○ *1	○	
	All Notes OFF	×	○ (123 – 127)	
	Active Sense	×	×	
	Reset	×	×	
Notes		*1 ○, × selectable.		

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO ○ : Yes

Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO × : No

MUSIC WORKSTATION (Sound Module & Keyboard Section) Date : Apr. 13 1992

Model JW-50

MIDI Implementation Chart

Version : 1.00

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default	1 – 16	1 – 16	
	Changed	1 – 16	1 – 16	
Mode	Default	×	Mode 3	
	Message	○	Mode 3, 4 (M = 1)	* 2
	Altered	*********		
Note Number		0 – 127	0 – 127	
	True Voice	*********	0 – 127	
Velocity	Note ON	○ * 1	○	
	Note OFF	○ * 1	×	
After Touch	Key's	×	× * 1	
	Ch's	○ * 1	○ * 1 (ch.10 : ×)	
Pitch Bend		○ * 1	○ * 1	
Control Change	0, 32	○ * 1	○ * 1 (MSB only)	Bank Select
	1	○ * 1	○ * 1	Modulation
	5	×	○ * 1	Portamento Time
	6, 38	○ * 1 (MSB only)	○ * 1	Data Entry
	7	○ * 1	○ * 1	Volume
	10	○ * 1	○ * 1	Panpot
	11	○ * 1	○ * 1	Expression
	64	○ * 1	○ * 1	Hold 1
	65	×	○ * 1 * 1	Portamento
	66	×	○ * 1	Sostenuto
	67	×	○ * 1	Soft
	91	×	○ * 1 (Reverb)	Effect 1 depth
	93	×	○ * 1 (Chorus)	Effect 3 depth
	98, 99	×	○ * 1	NRPN LSB, MSB
	100, 101	○ * 1	○ * 1	RPN LSB, MSB
	120	×	○	All Sounds Off
	121	×	○	Reset All Controllers
Prog Change		○ * 1	○ * 1	Program Number 1-128
	True #	*********	0 – 127	
System Exclusive		×	○ * 1	
System Common	Song Pos	×	×	
	Song Sel	×	×	
	Tune	×	×	
System Real Time	Clock	×	×	
	Commands	×	×	
Aux Messages	Local ON/OFF	×	×	
	All Notes OFF	×	○ (123 – 127)	
	Active Sense	○ * 1	○	
	Reset	×	×	
Notes		* 1 ○, × selectable. * 2 Recognize as M = 1 even if M ≠ 1.		

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO ○ : Yes

Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO × : No

Specifications

JW-50 :Music Workstation

Sound Source Section

● Maximum Polyphony
24 voices

● Effects
Reverb, Chorus

● Tones
Preset Tones :128
User Tones :128
GS Tones
Capital :128
Variation :61
MT-32 :128

● Drum Sets
Drum Sets :9
SFX Set :1

Sequencer Section

● Internal Memory

Note Capacity	:approx. 46,000 notes
Song Length	:999 measures
Songs	:8
Music Styles	:30 × 3
Preset Chord Changes	:30 × 3
User Chord Changes	:50
Block	:10 (A to J)
Chain Load Setting	:1

● Disk

Note Capacity	:approx. 80,000 notes
Songs	:max. 50 (JW-50 Song Data)
	:max. 99 (Standard MIDI File)
User Tone Sets	:max. 99
Backing Sets	:max. 99
Chain Load Setting	:1

● Tracks
Track 1 to 16
Tempo Track
Beat Track

** It is possible to record performance data on MIDI Channels that correspond to the Track Numbers (1 to 16).*

● Resolution
120 clocks/quarter note

● Tempo
20 to 240

● Time Signature
1/2 to 32/2, 1/4 to 32/4, 1/8 to 32/8, 1/16 to 32/16

● Recording Method
Realtime/Step/Backing

Hardware

● Keyboard
61 keys (with Velocity and Channel Aftertouch)

● Disk Drive
3.5inch Micro Floppy Disk Drive (2DD)

● Display
64 × 240 dots (backlit LCD)

● Connectors
Headphone Jack (Stereo)
Output Jacks (L(MONO), R)
MIDI Connectors (In, Out, Thru)
Pedal Switch
Pedal Hold Jack
External Control Jack
AC Adaptor Jack

● Power Supply
DC 9V :AC Adaptor

● Current Draw
1.2A

● Dimensions
997(W) × 377(D) × 115(H) mm
39 − 1/4(W) × 14 − 7/8(D) × 4 − 9/16(H)inches

● Weight
7.5 kg / 16 lbs 9oz (except AC Adaptor)

Accessories

Quick Start
Owner's Manual
AC Adaptor
  ACK-120 (120V)
  ACB-230 (230V)
  ACB-240A, ACB-240E (240V)
Demo Disk
Connection Cable (PJ-1M)

The specification for this product are subject to change without prior notice.

Roland Corporation

26045847 '92-8-C3-12D

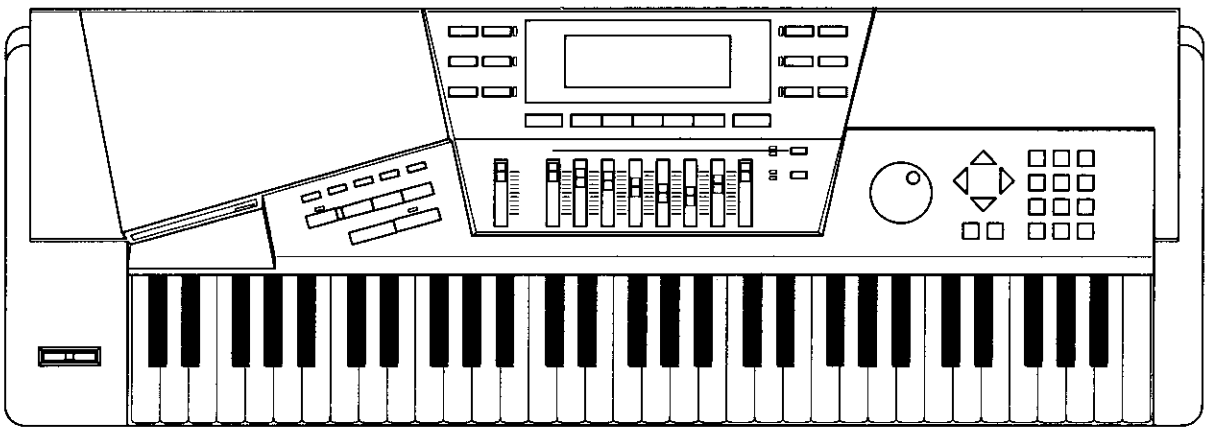
Roland

GENERAL MIDI

MUSIC WORKSTATION

JW-50

QUICK START



Introduction

Thank you, and congratulations on your choice of the Roland JW-50 Music Workstation. The JW-50 is equipped with a comprehensive set of features, all geared toward support of your creative endeavors with music. It is an all-in-one keyboard, designed to provide the utmost in operational ease.

This manual will guide you through all the basic operations you need to know; from connecting other equipment to saving your finished songs. Anyone using the JW-50 for the first time should read this manual first.

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< Key to Symbols Used in "Quick Start" and the "Owner's Manual" >

[Key Name]	: Indicates a key found on the panel.
[SHIFT] + [Key Name]	: Means that you should hold down [SHIFT] when you press [Key Name].
*	: Indicates a word of caution.
⇨	: Directs you to some other page for related or useful information.

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Features

Sound Sources Compatible with GS Format

♪ The instrument is equipped with 16-part multi-timbral sound sources which are compatible with the GS Format.

♪ Provides a wealth of high-quality onboard Tones and Drum sets.

♪ The Reverb and Chorus effects allow you to enjoy performing music which has more of a 'presence' to it. In addition, these effects can also be used to create your own unique sounds, by means of the settings available for them.

Easy-to-use High Performance Sequencer

♪ The instrument is equipped with its own 16-track sequencer that can be operated much like a familiar tape recorder.

♪ Numerous methods of recording are available, including real-time and step recording. This allows you to choose the method most convenient for your situation.

♪ With 12 different song editing functions and a microscope feature, the instrument makes almost any song editing task easy; from single notes to entire sections.

♪ The sequencer is also capable of playing songs in the Standard MIDI File format that are compatible with the GS Format.

The Backing Function Advantage for Creating Songs

♪ The Backing function greatly facilitates creation of accompaniment for your music.
Patterns consisting of 4 measures of accompaniment (including Instrument 1/Instrument 2/Bass/Drums) are put together to form 'Blocks'. Blocks can be created by simply selecting the Music Style you like, and specifying the chord progression. The Blocks are then combined to form the song's accompaniment.

Enhanced Operational Ease

♪ An over-sized display allows you to view a broad variety of settings at a single glance.

♪ All the operational conveniences that could be thought of are provided on this instrument. These include function keys (that provide instant access to any of the tasks available from any particular screen), as well as a full range of other useful keys, a dial, and a set of faders.

Mixing Feature

♪ The instrument is equipped with mixing capabilities which make the 8 faders available for control over the Volume/Pan of any of the tracks. Such control is available not only for playback, but for recording as well.

Chain Load Feature

♪ The instrument has a Chain Load feature which allows you to have a number of songs stored on a disk loaded and played in a pre-determined order. This conveniently allows you to play a group of songs during a live performance.

GENERAL MIDI

The sound sources in this unit conform to the General MIDI System specifications (General MIDI System Level 1). This means that General MIDI Scores (music data created for use with a General MIDI System device) can be played on this unit as well.

The sound sources in this unit conform to Roland's GS Format. This assures that any music data created for use with a GS Format sound generating device can be faithfully reproduced on this unit.

SMF

This unit is capable of playing Standard MIDI Files, such as "SMF Music Data"(720KB format 3.5 inch floppy disks).

Important Notes

Be sure to use only the adaptor supplied with the unit. Use of any other power adaptor could result in damage, malfunction, or electric shock.

[Power Supply]

- When making any connections with other devices, always turn off the power to all equipment first; this will help prevent damage or malfunction.
- Do not use this unit on the same power circuit with any device that will generate line noise, such as a motor or variable lighting system.
- The power supply required for this unit is shown on its nameplate. Ensure that the line voltage of your installation meets this requirement.
- Avoid damaging the power cord; do not step on it, place heavy objects on it etc.
- When disconnecting the AC adaptor from the outlet, grasp the plug itself; never pull on the cord.
- If the unit is to remain unused for a long period of time, unplug the power cord.
- A small amount of heat will radiate from the AC Adaptor, and thus should be considered normal.

[Placement]

- Do not subject the unit to temperature extremes (eg. direct sunlight in an enclosed vehicle). Avoid using or storing the unit in dusty or humid areas or areas that are subject to high vibration levels.
- Using the unit near power amplifiers (or other equipment containing large transformers) may induce hum.
- Observe the following when using the unit's disk drive. For further details, refer to "Before Using Disks".
  - Do not place the unit near devices that produce a strong magnetic field (eg. loudspeakers).
  - Install the unit on a solid, level surface.
  - Do not move the unit or subject it to vibration while it is operating.
- Do not expose this unit to temperature extremes (eg. direct sunlight in an enclosed vehicle can deform or discolor the unit) or install it near devices that radiate heat.

[Maintenance]

- For everyday cleaning wipe the unit with a soft, dry cloth (or one that has been slightly dampened with water). To remove stubborn dirt, use a mild neutral detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the risk of discoloration and/or deformation.

[Additional Precautions]

- Protect the unit from strong impact.
- Do not allow objects or liquids of any kind to penetrate the unit. In the event of such an occurrence, discontinue use immediately. Contact qualified service personnel as soon as possible.
- Never strike or apply strong pressure to the display.
- Should a malfunction occur (or if you suspect there is a problem) discontinue use immediately. Contact qualified service personnel as soon as possible.
- A small amount of noise may be heard from the display, and thus should be considered normal.
- To prevent the risk of electric shock, do not open the unit or its AC adaptor.

[Memory Backup]

- The unit contains a battery which maintains the contents of memory while the main power is off. The expected life of this battery is 5 years or more. However, to avoid the unexpected loss of memory data, it is strongly recommended that you change the battery every 5 years.
  Please be aware that the actual life of the battery will depend on the physical environment (especially temperature) in which the unit is used. When it is time to change the battery, consult with qualified service personnel.

- When the battery becomes weak, the following message will appear in the display: "Internal Battery Low". Please change the battery as soon as possible to avoid the loss of memory data.

- Please be aware that the contents of memory may at times be lost; when the unit is sent for repairs or when by some chance a malfunction has occurred. Important data should be stored Disk, or written down on paper. During repairs, due care is taken to avoid the loss of data. However, in certain cases, (such as when circuitry related to memory itself is out of order) we regret that it may be impossible to restore the data.

[Before Using Disks]

Handling of the drive

- Install the unit on a solid, level surface in an area free from vibration. If the unit must be installed at an angle, be sure that the angle of installation falls within the tolerance range (upward; 7: downward; 33).

- Avoid using the drive in areas of high humidity (eg. condensation). High levels of moisture can adversely affect the operation of the drive and/or damage disks. When the unit has been transported, allow it to warm to room temperature before operating.

- To insert a disk, push it firmly into the drive. To remove a disk, press the eject button firmly. Do not use excessive force to remove a disk which is lodged in the drive.

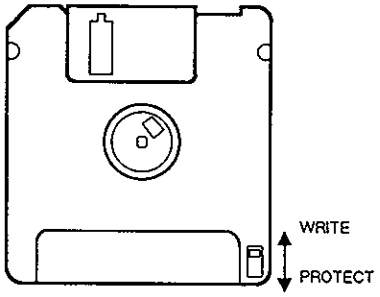
- The disk drive indicator will light brightly while the drive is in operation. Never attempt to remove a disk when the indicator is brightly lit. Doing so may damage the disk or the data stored on it.

- Before powering up or powering down, remove any disk from the drive.

Handling Disks

- Disks contain a plastic disk coated with magnetic particles. Observe the following when handling disks:
  - Never touch the magnetic surface of the disk.
  - Do not subject disks to temperature extremes (eg. direct sunlight in an enclosed vehicle). Recommended temperature range: 10 to 50 ℃ .
  - Do not expose disks to strong magnetic fields such as those generated by loudspeakers.

- Floppy disks contain a 'write protect' switch which can protect a disk from accidental erasure. It is recommended that the switch be kept in the 'protect' position and moved only when you wish to write new data onto the disk.



- All important data should be copied onto backup disks. This provides a complete duplicate of the data should the original disk be lost or damaged.

- Identification labels should be firmly fixed to the disks. Should a label come loose while the disk is in the drive, it may be difficult to remove the disk.

- Do not leave disks inserted in the drive unnecessarily for extended periods of time. Otherwise, the disk's magnetic coating could be damaged.

About the Sequencer

The JW-50 is equipped with a "sequencer," a device capable of recording and playback. The sequencer was designed for ease of use, and can be operated in much the same way as a multi-track tape recorder (MTR).
For example, the JW-50 provides 16 tracks onto which performance data can be recorded. With these tracks, the numerous takes made in the course of a recording can be layered onto each other, the same as can be done on an MTR. In addition, the volume and balance can be set independently for each track, much like what is accomplished using a mixer.

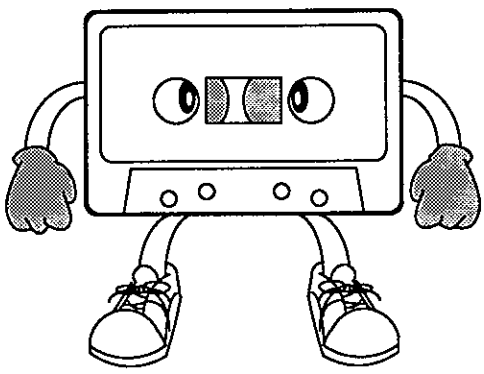
In what ways are Sequencers different from MTRs?

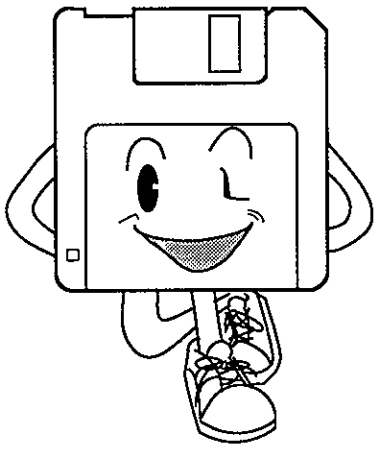
An **MTR** is a machine which simply records sound onto magnetic tape. Playback of a performance recorded on an MTR, therefore, is simply a recreation of the sounds that were recorded.

A **sequencer**, on the other hand, is a device which records information about all actions carried out during a performance. The most obvious of such actions concerns the notes themselves – – here the information will describe things such as which notes were played, when they were played, how strongly the notes were played, and how long the notes (keys) were held. Such information is all stored as data, which when played back, will send the appropriate instructions to an electronic instrument, thus playing the music much as if the performer(s) were again playing the instrument(s).
Of course, in order to use a sequencer, you must have sound generating equipment that is capable of playing music as a result of instructions sent to it. No separate sound generating unit is necessary with the JW-50, since it has its own sound sources.
All of the performance data you record can be conveniently stored on the same type of floppy disks that are used by many computers – – 3.5 inch micro-floppy (2DD) disks.

MTR
Records sounds made by musical instruments

Sequencer
Records information about all actions carried out while playing a MIDI instrument.





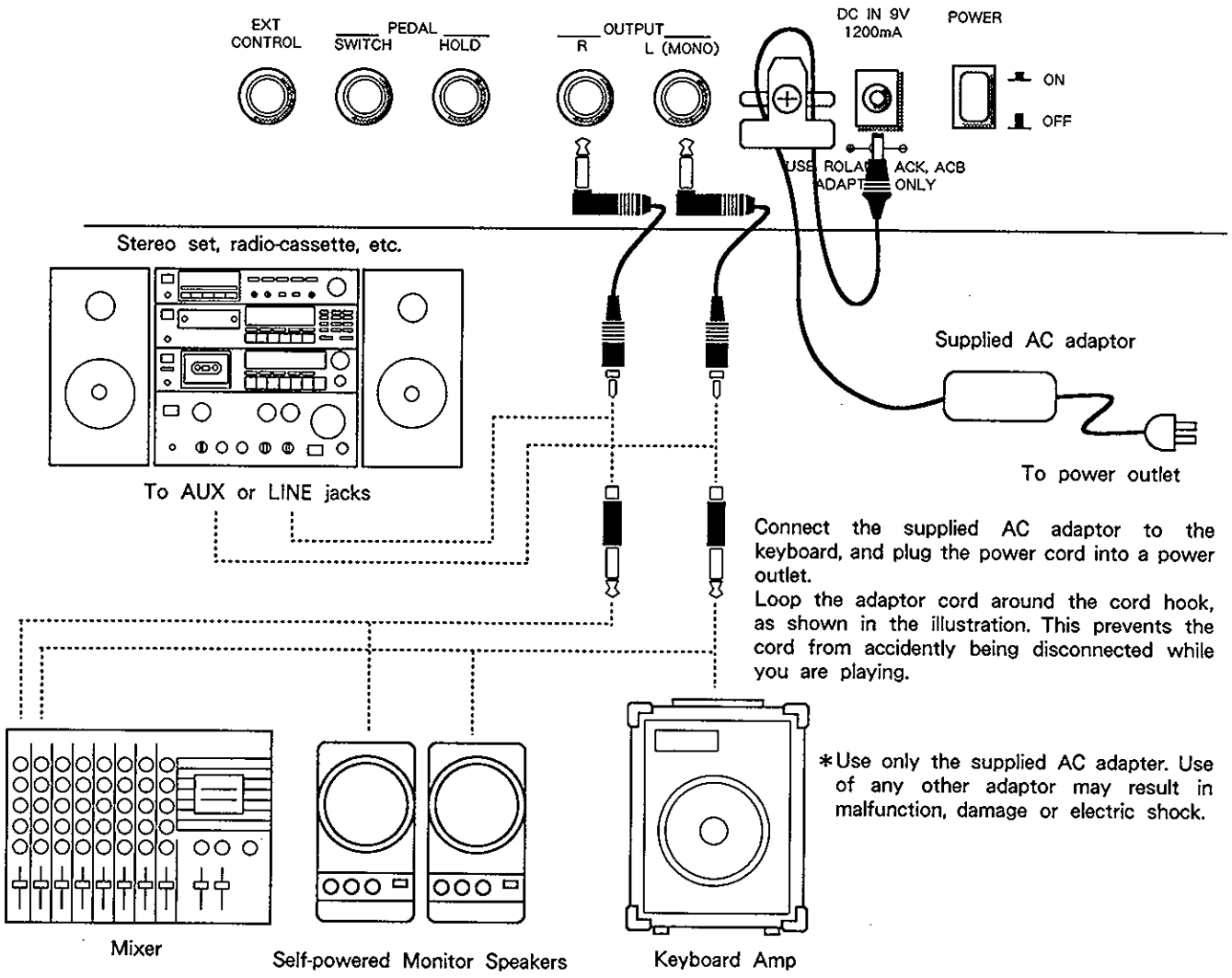
Sequencers provide these advantages over Multi-Track Tape Recorders:

1) You can easily change the tempo of the playback without changing the pitch.
2) Any mistakes made during recording can be corrected without affecting any other recorded data. Any changes in the sound you wish to use can be made after the recording is complete.
3) Since it is not the sound itself that is recorded, there won't be any deterioration in the sound quality, and no crosstalk can occur (where sound recorded on one track can be heard faintly on adjoining tracks).
4) Reset, rewind and fast-forward operations are accomplished almost instantaneously.

As you can see, a sequencer is in many ways superior to an MTR. The only drawback is that only MIDI instruments are able to respond to a sequencer. Vocals or acoustic instruments cannot, therefore, be recorded on a sequencer.

Making the Connections

Connections should be made only when the power to all units is OFF.

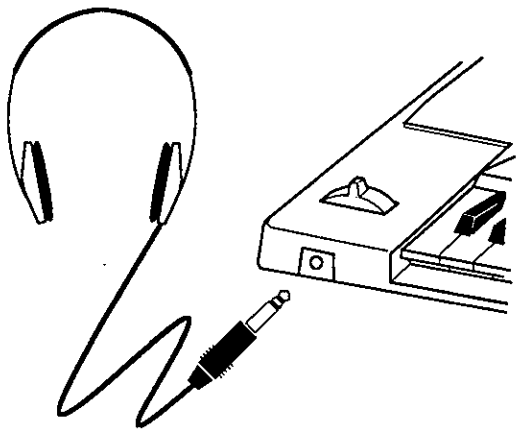


Connect the supplied AC adaptor to the keyboard, and plug the power cord into a power outlet.
Loop the adaptor cord around the cord hook, as shown in the illustration. This prevents the cord from accidently being disconnected while you are playing.

*Use only the supplied AC adapter. Use of any other adaptor may result in malfunction, damage or electric shock.

⇨ *The supplied audio cable, when used as is, provides for [1/4" phone ↔ 1/4" phone] connections. However, when the adapter plug is removed from one end, the cable can be used for [1/4" phone ↔ RCA phono] connections.*

Connecting Headphones



Connect headphones to the PHONES jack on the front of the instrument.

⇨ *Even with headphones connected, sound is still output from the Output Jacks.*

* *Use headphones with an impedance from 8 to 150 ohms.*

Turning On the Power

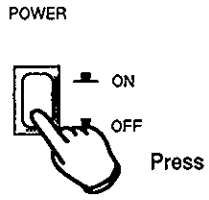
Turn on the power and check out how your new instrument sounds.

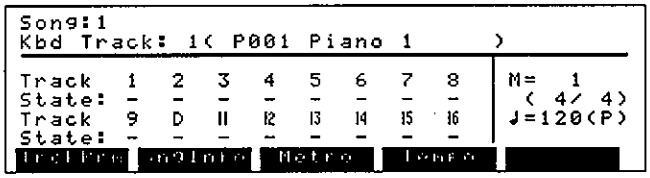
Steps to Take

① Before turning on the power, be sure everything is connected properly and the volume on your amplifier is set to zero.

② Turn on the JW-50.

Look at the display and you will see the JW-50's Basic screen. This is the screen you will see when the power is turned on.





③ Now you can turn on the power to your audio equipment. Set the volume on the amp and the master volume on the JW-50 to appropriate levels.

Play the keyboard!

** This unit is equipped with a circuit protection device. A brief interval after power up is required before the unit will operate.*

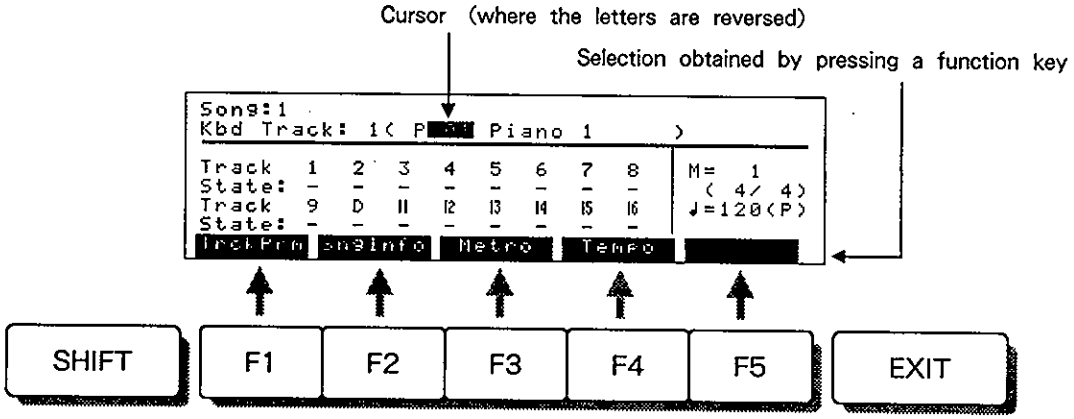
< If the Display Is Difficult to Read >

Adjust the display contrast with the LCD CONTRAST knob on the rear panel of the instrument.

Basic Operations

Before simply diving in and trying to find your way around the many operations offered, you should first learn some of the basics. The information below, once learned, should almost be all you need to accomplish the majority of the things you will wish to do with the JW-50. Of course, there are a number of other specialized operations, designed to carry out certain tasks, but those aren't included here.

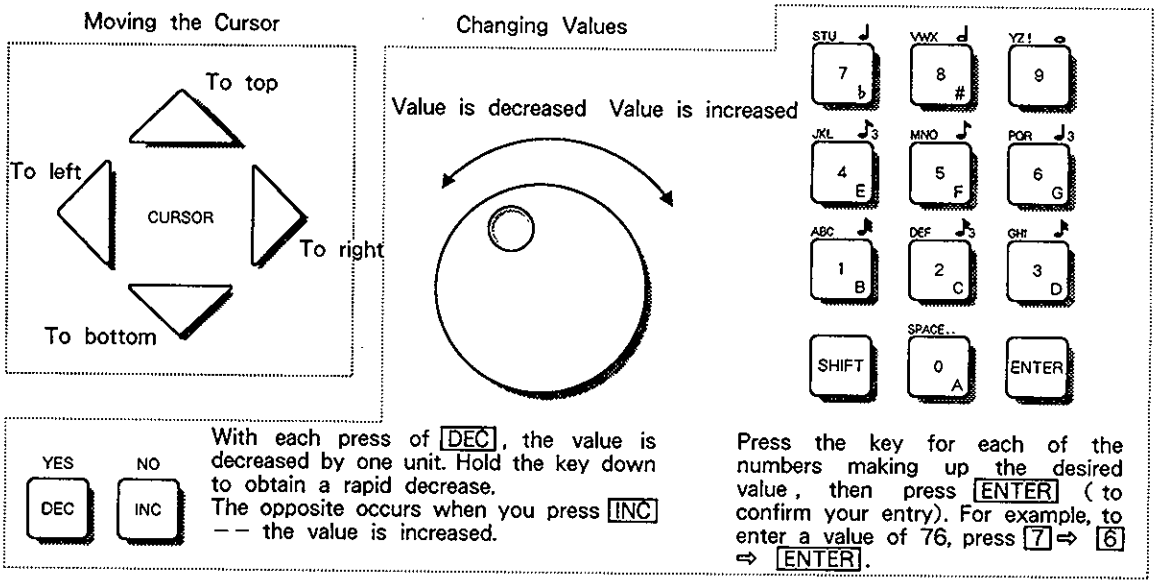
The Display and the Function Keys



- The screen's name will be displayed in the upper-left corner (except for the Basic screen, shown above, and the Block screen).
- In some of the screens, the five function keys will provide more than five functions. In these cases, hold down the [SHIFT] while you press the function key to obtain the alternate selection it offers.

Editing Values

To make changes in the value for something, move the cursor to that value, then use the Dial/[DEC] [INC]/numeric keys to make the desired change.


Moving the Cursor
To top
To left
CURSOR
To right
To bottom
Changing Values
Value is decreased
Value is increased
YES
NO
DEC
INC
With each press of [DEC], the value is decreased by one unit. Hold the key down to obtain a rapid decrease.
The opposite occurs when you press [INC] -- the value is increased.
STU 7 b
VWX 8 #
YZ! 9
JKL 4 E
MNO 5 F
POR 6 G
ABC 1 B
DEF 2 C
GHI 3 D
SPACE 0 A
SHIFT
ENTER
Press the key for each of the numbers making up the desired value, then press [ENTER] (to confirm your entry). For example, to enter a value of 76, press [7] ⇨ [6] ⇨ [ENTER].

< Concerning Use of the Numeric Keys >

- When a value has not yet been confirmed for entry, it will be surrounded by a rectangle. If you should move the cursor to another position at this time, the previous value will be retrieved.
- To enter a negative value, hold down [SHIFT] while you press [7]. Then enter the value.

■ Listening to the Demo Songs (ROM Play)

The JW-50 contains two demonstration songs stored in ROM which highlight the instrument's capability. Here's how to listen to those songs.

MYRIAD WAY Music by Mitsuru Sakaue Copyright ©1992, Roland	Mitsuru Sakaue Mitsuru Sakaue began composing and doing arrangements for commercials and videos while still in school. In particular, his studio work earned for him a solid reputation. Currently, as a chief producer within Idecs, Inc., he produces commercial musics and jingles for FM stations. His range of activity is broad, and includes his work as an instructor and expert on musical instruments/computer music for the Roland Learning Center (Japan), as well as for other schools. In addition, he has had numerous other opportunities for displaying his talents well while serving as demonstrator/product specialist for Roland.
F190/2 Music by Akihiro Kaseda Copyright ©1992, Roland	Akihiro Kaseda Akihiro Kaseda is a keyboardist who bases his activities mainly in the Kansai (western metropolitan) region of Japan. Since his college years, when he racked up experience with numerous bands, he has made his presence felt throughout all sectors of the Kansai music scene. In recent years he has become known and respected as a composer and sound producer, and has ventured into creation of tunes used in commercials on T.V. and on FM.

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Steps to Take

① Press [WRITE] and [SONG EDIT] simultaneously.

The ROM Play screen will appear.

② Press [▶] (PLAY), and the first song, "MYRIAD WAY" will start playing.

The two songs will play repeatedly, any number of times.

③ Press [■] (STOP) to stop playback.

④ Press [EXIT] to return to the Basic screen.

Playing a Variety of Sounds

The JW-50 contains a large number of sounds that you can select at any time. These sounds are referred to as "Tones." The instrument also provides a number of Drum sets which allow you to obtain a different percussive sound from each key on the keyboard.

Selecting Tones

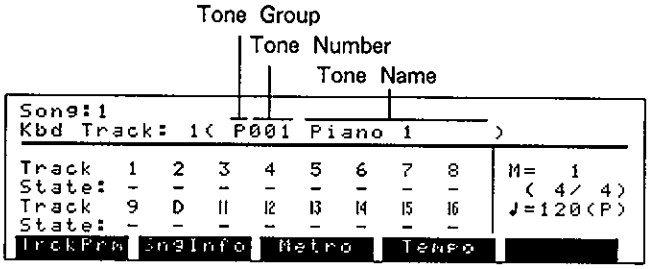
There are three Tone groups. Of these, only the Preset and User Tones can be selected while playing the instrument.

Preset Tones (P1 to P128)	The fundamental Tones of the JW-50.
User Tones (U1 to U128)	Tones which allow for creation of new sounds.
GS Tones (–1 to –128)	These Tones are designed to behave in conformity with the GS Format. They can be used for creating User Tones, or for the accompaniment produced with the Backing feature.

⇨ *For further information on the types of Tones, refer to the "Preset Tone Chart" (☞ p. 6-7) in the Owner's Manual.*

⇨ *As a factory default setting, the User Tones are identical to the Preset Tones.*

Steps to Take



① Select the number of the Tone you wish to hear.

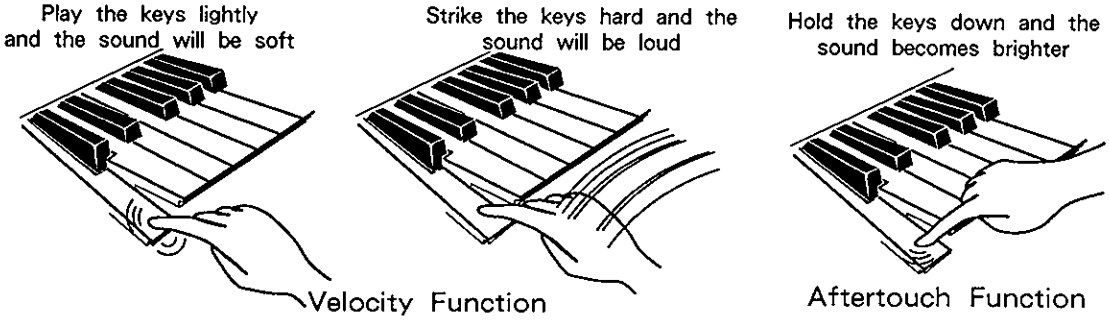
Rotate the Dial to the right to select a higher number, and to the left for a lower number.

Press [INC] for a higher number, and [DEC] for a lower number.

With the numeric keys, press the key(s) making up the Tone number. Press [ENTER] to confirm the choice.

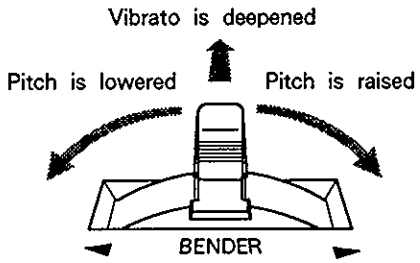
The name of the Tone you have selected will appear in the display. Play the keyboard and you will hear the selected Tone.

The JW-50 responds to the way you play the keyboard:


Play the keys lightly and the sound will be soft
Strike the keys hard and the sound will be loud
Hold the keys down and the sound becomes brighter
Velocity Function
Aftertouch Function

⇨ *Velocity is a function which provides for changes in volume as a direct result of playing dynamics. The Aftertouch function produces changes in the sound when the keys on the keyboard are pressed after they have been played.*

* *The effect obtained from Aftertouch will vary from Tone to Tone.*



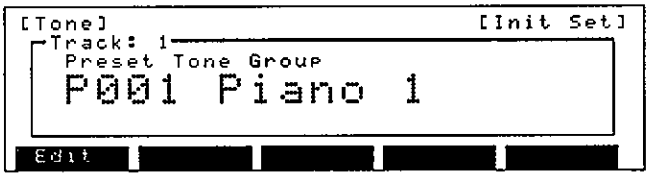
The Pitch Bend/Modulation Lever is used to alter the pitch of sounds, or to create a vibrato effect (fluctuations in pitch).
When moved all the way to the right (or left), the lever raises (or lowers) the pitch by a whole tone.
Modulation is effective for duplicating the vibrato of wind instruments. Modulation is obtained when the lever is pushed forward.

< To Select a User Tone >

To select a User Tone, move the cursor to the left (Tone Group), and change the [P] to [U].
Rotate the dial to the right for [U], and to the left for [P].
Alternately, press [INC] for [U], and [DEC] for [P].
Should you wish to change the Tone number, move the cursor to the right (Tone Number) and make the selection.

< Changing Tones from the Tone Screen >

Tones can also be changed from the Tone screen. Press [TONE] to select the Tone screen. Select Tones as you would in the Basic screen.
To return to the Basic screen, press [SEQUENCER].



Selecting Drum Sets

When you wish to play drums from the keyboard, you must select track 10 (Drum track). On track 10, the percussive instrument sounds contained in the Drum set will play instead of a Tone. For track 10 you can select any one of the 8 Drum sets. Here you may want to try out some of these sets.

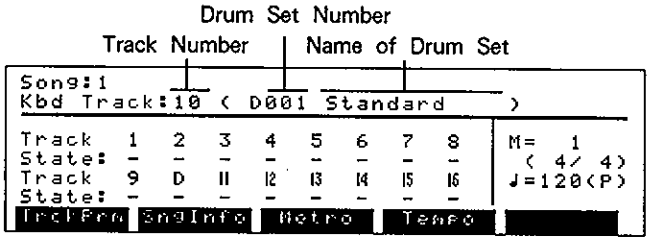
⇨ *For details on the percussive instrument sounds contained in Drum sets, refer to the "Drum Sets Chart" (☞ p. 6-13) in the Owner's Manual.*

Steps to Take

① Select track 10 (Drum track).

Move the cursor to the track number, and select track 10 (Drum track).

The name of the Drum set you have selected will appear in the display.



You can obtain a different percussive sound from each key on the keyboard.

② To select a different Drum set, change the Drum Set Number.

Move the cursor to the Drum Set Number, and select the desired set.

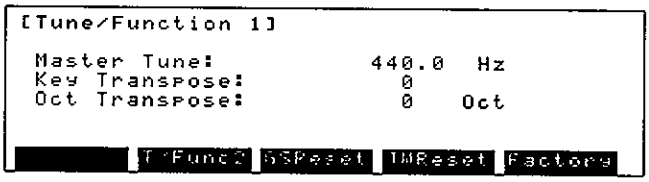
When you have finished playing drums, re-select track 1.

< To Play Percussive Instrument Sounds Below the C2 Key >

Use the Octave Transpose function to shift the keyboard's range downward by an octave.

① Press [TUNE/FUNC].

The Tune/Function 1 screen will appear.



② Set "Oct Transpose" to [− 1 Oct].

③ Press [SEQUENCER] to return to the Basic screen.

** The setting you make for the Octave Transpose function will be retained even while the power is off. For this reason, you should set the unit back to normal [0 Oct] when you are finished playing.*

■ Playing the Songs on the Supplied Disk

Two demo songs are recorded on the disk that came with the instrument. Follow the steps below to play these songs.

NOTE **:Please refer to "Before Using Disks" (☞ p. 6) for information on the proper handling of disks and the disk drive.**

ETHNO PAPA Music by Junichi Kawaguchi Copyright ©1992, Roland	Junichi Kawaguchi Junichi Kawaguchi is an arranger/composer/keyboardist who is currently involved mainly with studio recording. He has produced compositions and arrangements for quite a few well-known artists. Within Japan, he has also played an important role during numerous demonstrations, including those for Roland's S and JV series, at musical instrument fairs and other special events.
THE VOYAGE Music by Chong Lim Copyright ©1992, BMG Publishing	Chong Lim Chong Lim is a busy session keyboard player, arranger, producer and composer working mainly in the cities of Melbourne and Sydney, Australia. He has collaborated with many top international artists including Jermaine Jackson, Jenny Morris, Little River Band, The Eurogliders etc. He is also actively involved in the composition of soundtrack music for film and television.

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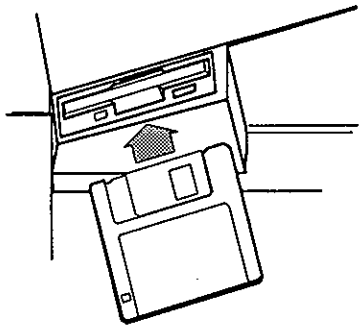
Loading Songs from Disk

Loading can be thought of as making a copy of the data on the disk, and placing that copy into the JW-50. The original data on the disk will not be altered in any way. Here, let's try loading the first song on the disk, "ETHNO PAPA."

Steps to Take

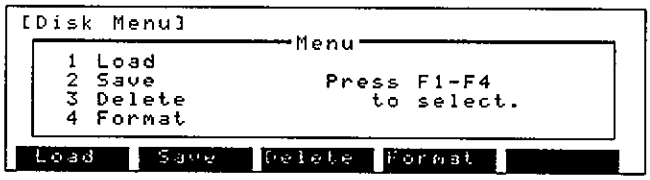
① **Insert the supplied disk.**

(Label side up; metal shutter first.)

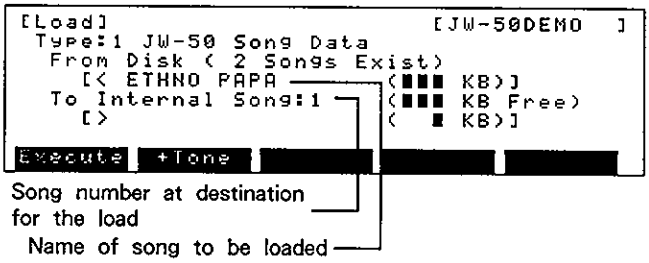


②Select the Load screen.

1) Press [DISK] to select the Disk Menu.



2) Press [F1] Load to select the Load screen.



③Be sure that the "Type" (type of data) has been set to [1 JW-50 Song Data].

④Confirm that the display reads "ETHNO PAPA" as the song that is to be loaded, and that the destination Song Number is [1].

⑤Press [F1] Execute, and the song will be loaded.

During the loading process, "Now Loading" will appear in the upper-right corner of the display.

When the loading operation is finished, "Completed" will appear in the display.

< When a Song Already Exists at the Destination Song Number >

When you press [F1] Execute, "Are you sure?" will appear in the display. This message asks you to confirm that you actually wish to erase the song that is already at that number, and have it replaced with the song you are attempting to loading.

To proceed and have the new song loaded, press [F4] YES. To cancel, press [F5] NO.

⇨ *The YES/NO selection can also be made using [DEC] (YES), or [INC] (NO).*

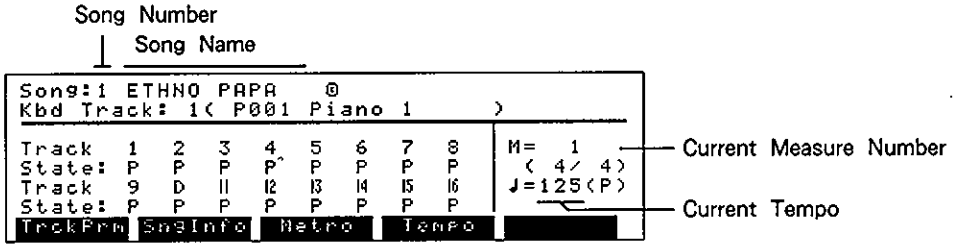
Playing Back Songs (From the Basic Screen)

Now, with a song loaded, you are ready to play it.

Playback

① Press [SEQUENCER] to return to the Basic screen.

The name of the song you have loaded will appear in the display.


Song Number
Song Name
Song:1 ETHNO PAPA
Kbd Track: 1(P001 Piano 1)
Track 1 2 3 4 5 6 7 8
State: P P P P P P P P
Track 9 10 11 12 13 14 15 16
State: P P P P P P P P
M= 1
(4/ 4)
♩=125(P)
TrkPrm SngInfo Metro Tempo
Current Measure Number
Current Tempo

② Press [▶] (PLAY) and playback will begin.

When it has finished playing, it will stop automatically.

⇨ *Should you wish to stop playback of the song partway through, simply press [■] (STOP). When you have stopped midway through a measure, a "+" will appear to the right of the measure number. You can press [▶] (PLAY) again, and the song will resume from the point where you stopped it.*

⇨ *GS Tones are employed by the songs contained on the supplied disk.*

Some Other Procedures

● Changing the tempo

Move the cursor to the tempo display and change it.

● To return to the beginning of the song

Press [|◀] (RESET).

● To move backwards through a song

You are moved backwards through the song while you hold [◀◀] (BWD). Or, with each single press of this key, you can move backwards by one measure. Once you have moved to the desired measure, you should hold down [SHIFT] and press [■]. (Update)

● To move forward through a song

You are moved forward through the song while you hold [▶▶] (FWD). Or, each single press of this key will move you forward by one measure. Once you have moved to the desired measure, you should hold down [SHIFT] and press [■]. (Update)

● To play the song from a selected measure

Move the cursor to the measure number, and specify the measure from which playback will begin. Next, hold down [SHIFT] and press [■]. (Update) Then press [▶] (PLAY) to begin playback.

● To mute certain tracks

Move the cursor to "State" for the track you wish to mute. Change the [P] (Play) to [M] (Mute).

< Concerning the Update Feature >

This function allows a song to be played correctly from the current measure after you have moved forward or backward in the song. Always perform an update after you have moved through the song using [▶▶] (FWD) or [◀◀] (BWD). If you do not perform this update function, the wrong Tones could be sounded, or they might sound in an inappropriate manner.

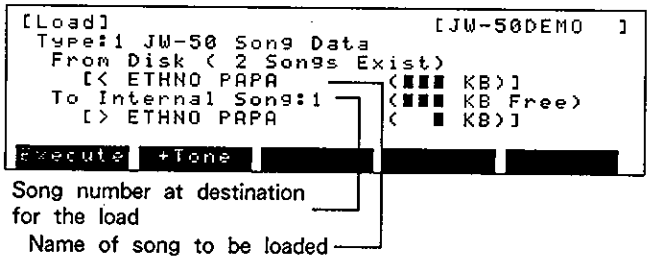
Loading the Second Song

Next, try loading "THE VOYAGE." Since you loaded the first song into the number 1 song position, load this song as song number 2.

Steps to Take

① Select the Load screen.

1) Press [DISK] to select the Disk Menu.
2) Press [F1] Load to select the Load screen.



② Be sure that the "Type" (type of data) has been set to [1 JW-50 Song Data].

③ Select the song to be loaded and the destination song number.

Select "THE VOYAGE" as the song to be loaded, and [2] as the song number.

④ Press [F1] Execute and the song will be loaded.

When the loading process is finished, "Completed" will appear in the display.

⑤ Once you have loaded the song, remove the disk from the drive.

Press the eject button (the button at the lower-right of the drive's slot), and the disk will pop out.

** The JW-50 allows you to load up to 8 songs into its memory at one time (song numbers 1 to 8). There are, however, limits to the amount of data which can be stored in its memory. Whenever the limit has been reached, and the unit is unable to load a song, "Out of Memory" will be displayed. Should this happen, use the Song Clear function to erase songs from memory that you no longer need. (☞ p. 34)*

⑥ Press [SEQUENCER] to return to the Basic screen. Be sure that the song you just loaded is selected.

Playing Back Songs (From the Mixer Screen)

The song "THE VOYAGE" contains information in it which calls for changes in volume and pan. Listen to this song from the Mixer screen so you can monitor the volume/pan changes while you use the faders to adjust the volume levels and pan orientation.

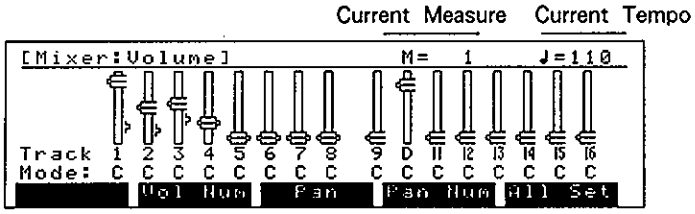
⇨ *"Pan" refers to a setting which determines the localization (position) of the sound that will be obtained when using a stereo output.*

Monitoring

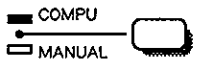
Try monitoring the changes in the volume that are recorded in the demo song:

① Press [MIXER].

The Mixer screen (shown below) will be displayed.


Current Measure
Current Tempo
[Mixer:Volume]
M= 1
♩=110
Track 1 2 3 4 5 6 7 8 9 D 11 12 13 14 15 16
Mode: C C C C C C C C C C C C C C C C
Vol Num
Pan
Pan Num
All Set

② Be sure that "Mode" (Mix mode) for every track that is displayed is set at [C] (Compu). If there are any that aren't set this way, press [COMPU/MANUAL] to get the COMPU indicator to light for each.



③ Press [▶] (PLAY) and playback will begin.

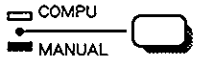
The graphics allow you to monitor the changes in the volume that are recorded in each track.

Using the Faders for Adjustment

Next, try your hand at adjusting the volume for each track using the faders.

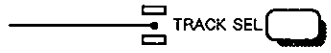
① Press [COMPU/MANUAL] and confirm that the MANUAL indicator has lit.

"Mode" (Mix mode) for every track that is displayed should now be set at [M] (Manual).



② Press [TRACK SEL] and select the track(s) you wish to control using the faders.

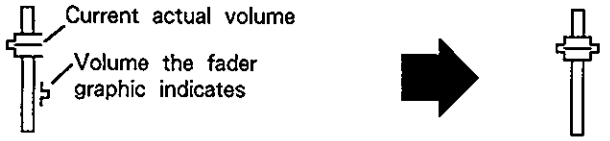
With upper indicator lit : Tracks 1 to 8



With lower indicator lit : Tracks 9 to 16

③ Move the fader for the track you wish to control until the actual volume and the graphic fader display match.

Once aligned in this manner, the fader will be able to provide real-time control over the volume.



④ **Press [|◀] (RESET) to return to the beginning of the song, then start playback.**

⑤ **Now when you move the fader, you obtain actual changes in volume.**

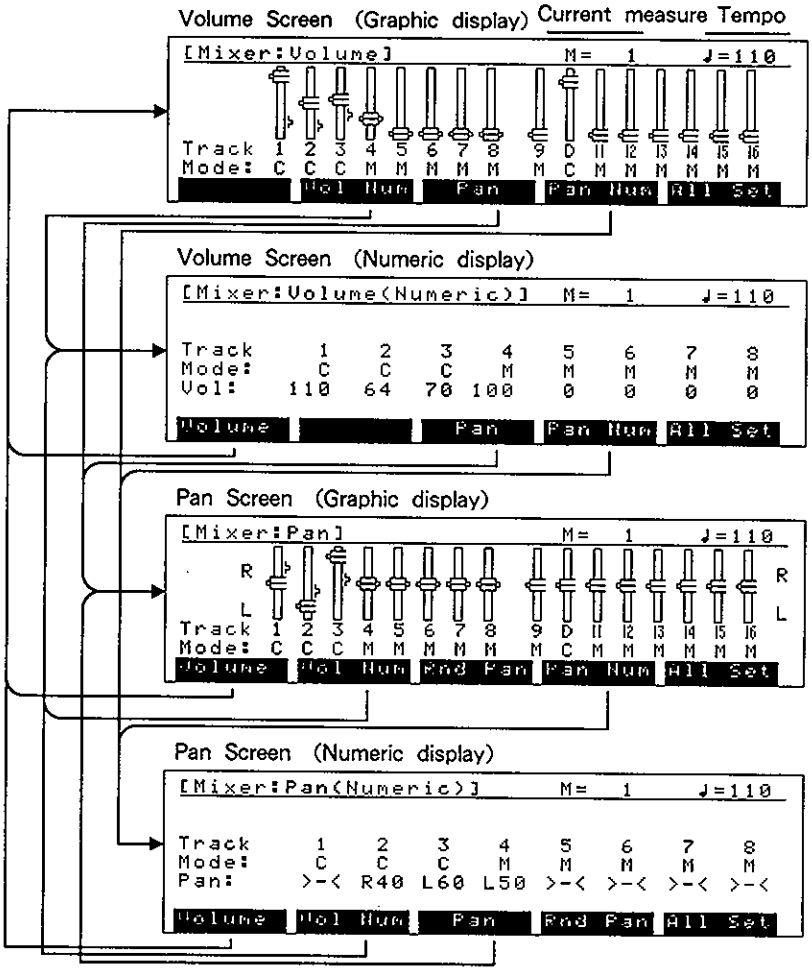
< Using a Fader to Adjust the Volume for a Specific Track >

① Press [COMPU/MANUAL] so the COMPU indicator lights.

② Move the cursor to "Mode" for the track to be controlled, and change [C] (Compu) to [M] (Manual). The faders can be used to control the volume for a track that is set to [M] (Manual). Tracks that are set to [C] (Compu) allow you to make changes in the volume data that is recorded as part of a song.

Switching Screens

The Mixer mode contains 4 screens which you can select using the function keys. The same procedures are used in each of these screens, whether monitoring or using the faders for control.


Volume Screen (Graphic display)
Current measure Tempo
[Mixer:Volume] M= 1 ♩=110
Track 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Mode: C C C M M M M M M C M M M M M M
Vol Num Pan Pan Num All Set
Volume Screen (Numeric display)
[Mixer:Volume(Numeric)] M= 1 ♩=110
Track 1 2 3 4 5 6 7 8
Mode: C C C M M M M M
Vol: 110 64 70 100 0 0 0 0
Volume Pan Pan Num All Set
Pan Screen (Graphic display)
[Mixer:Pan] M= 1 ♩=110
R
L
Track 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Mode: C C C M M M M M M C M M M M M M
Volume Vol Num Pan Pan Pan Num All Set
Pan Screen (Numeric display)
[Mixer:Pan(Numeric)] M= 1 ♩=110
Track 1 2 3 4 5 6 7 8
Mode: C C C M M M M M
Pan: >-< R40 L60 L50 >-< >-< >-< >-<
Volume Vol Num Pan Pan Pan All Set

⇨ *From the Numeric display, you can monitor the status of either tracks 1 to 8 or 9 to 16 at one time. To switch between display of these two groups, press [TRACK SEL].*

Before Starting to Record

In this section we will start using the sequencer part of the instrument and let you make some of your first sequencer recordings. But, before recording anything, you first need to know some of the basic procedures for the 3 types of recording available.

⇨ *Please have ready a new 3.5 inch floppy disk (2DD), since we will be saving the song we create onto floppy disk when it is finished.*

Making a Song : Basic Procedures

① Turn the power on.
② Record the song.
③ Carry out whatever editing is necessary.
④ As finishing touches, use Mixer recording to add volume/pan changes.
⑤ Save the finished song onto disk.
⑥ Turn the power off.

The 3 Types of Recording

The three types of recording below are available on this instrument. You could go ahead and try out whichever of these recording methods that you are interested in most, but we recommend that you follow along in the order they are presented here, so you gain an overall understanding of what is available, and know the basic procedures used for each type of recording.

● Real-Time Recording

This type of recording simply allows you to record whatever you play on the keyboard. All the dynamics and expression of your performance will be faithfully captured.

● Step Recording

In this method of recording, you enter each of the notes in the song one by one. This conveniently allows you to create music which accurately expresses what is on the sheet music. This method is also the best to use when recording an instrument part that should maintain a precise rhythm (such as bass or percussion). It is also useful for difficult phrases which you do not feel comfortable enough with to play on the keyboard.

● Recording Using the Backing Feature

The Backing feature allows you to easily produce accompaniment for your songs through combinations of four instrument parts (Drums/ Bass/Instrument 1/Instrument 2). To begin with, you must create a number of 4-measure blocks of accompaniment phrases (Blocks). Blocks are easy to make – – all you need to do is select the Music Style you wish to use, then create a chord progression. Then, simply arrange the Blocks in the desired order and record them into the sequencer.

⇨ *Music Styles are a collection of basic musical elements that together form a particular genre, such as rock or jazz etc. A wide range of Music Styles are contained within the JW-50.*

Real-Time Recording

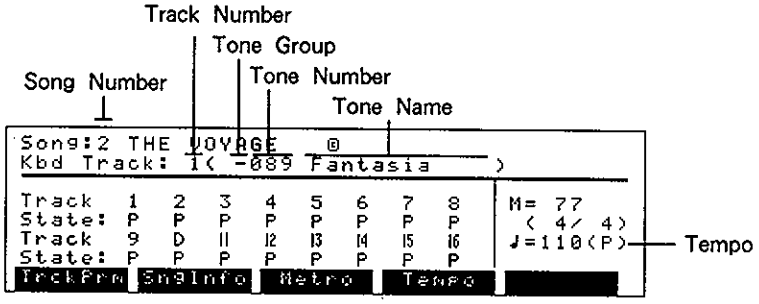
Now, try recording what you play on the keyboard.

Preparing for recording

Decide on the Song Number, tracks, Tones, beat and tempo to be used for recording.

Steps to Take

① Press [SEQUENCER].



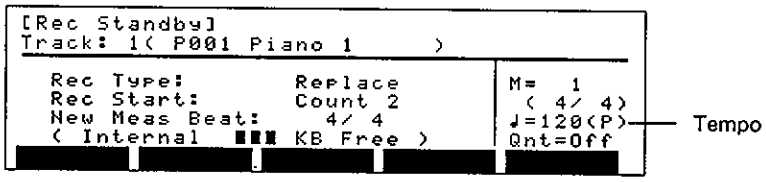
② Here, we want to use a different location from where we previously loaded songs.

Move the cursor to the Song Number and select [3].

③ Set the recording track to [1] and select the desired Tone.

④ Press [●] (REC) to enter recording standby.

When in recording standby, the [●] (REC) indicator will start blinking and the Rec Standby screen will appear.



⇨ *To record a phrase in a beat other than 4/4, you will need to change the beat. To do so, move the cursor to "New Meas Beat" and set the new beat.*

⑤ While listening to the metronome, set the tempo to be used for recording.

Recording onto Track 1

Recording

① Press [▶] (PLAY), and after a two measure count-in, the unit will begin recording (the indicator on [●] (REC) will light). Play the accompaniment part of your song.

② When you are finished playing, press [■] (STOP).

⇨ *Information about the Tone(s) that were selected at the moment you began recording is included within the recording.*

Listen to what you've played

① **Press [I◀] (RESET) to return to the beginning of the song.**

② **Press [▶] (PLAY) and listen to how it sounds.**

When you reach the end, playback stops automatically. To stop partway through, press [■] (STOP).

If you are not satisfied with the result of the recording

Try it again

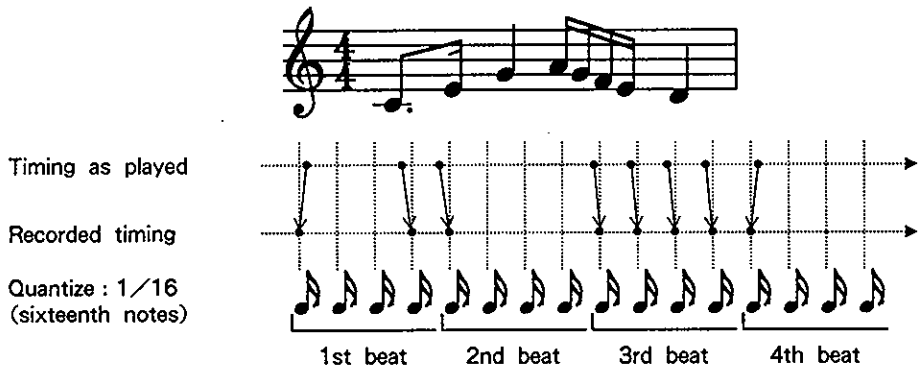
① **Press [I◀] (RESET) to return to the beginning of the song.**

② **After pressing [●] (REC), press [▶] (PLAY) to start recording.**

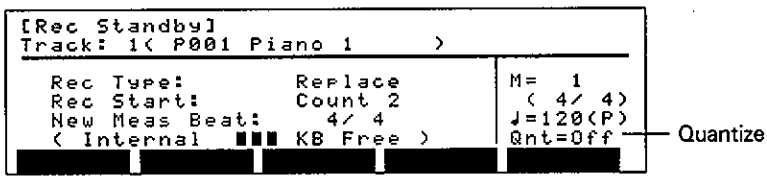
While this new recording takes place, the performance data you previously recorded is erased.

Quantization

The Quantize feature is helpful for recording instruments such as drums and bass, where a perfectly timed rhythm is often required. To obtain such perfect timing, simply set the unit to use quantization. When Quantize is used, the notes played will automatically be shifted to fall precisely on the specified beat in the measure, even if the timing of the actual performance itself is not precise.



The setting for Quantize is made from the Rec Standby screen.



The following levels of resolution are available:

[Off] No quantization		[1/16]	Sixteenth notes	[1/6]	Quarter note triplets
[1/32]	Thirty-second notes	[1/12]	Eighth note triplets	[1/4]	Quarter notes
[1/24]	Sixteenth note triplets	[1/8]	Eighth notes	[1/2]	Half notes

Playing back Track 1 while you record onto Track 2

Next, we will use what was recorded on track 1 as accompaniment while you play a melody which will be recorded onto track 2.

Steps to Take

① **From the Basic screen, set the recording track to [2]. Select the desired Tone.**

② **Press [|◀] (RESET) to return to the beginning of the song.**

③ **Press [●] (REC) to enter recording standby.**
Check the settings for Quantize.

④ **Press [▶] (PLAY) to begin recording. Play a melody while listening to the accompaniment on track 1.**

⑤ **When you are finished, press [■] (STOP).**
You are returned to the Basic screen.

⑥ **After pressing [|◀] (RESET), press [▶] (PLAY) to listen to how it now sounds.**

As you can see, it is quite easy to record onto certain tracks and then listen to them while you go on and record others. This type of recording is known as multi-track recording.
Ordinarily, when carrying out multi-track recording, you would record the percussion first, then the bass, and after that the accompaniment, and finally the melody. Starting with percussion and bass gives you a foundation to build on.

Recording a drum performance

Next, as the last project for this section on Real-Time recording, we'll create a percussion piece.
Unlike other kinds of instruments, it is very difficult to achieve the desired results with drums if you use Real-Time recording and try to do it all at once. Since percussion parts are usually made up of recurring patterns, each consisting of several measures, the best way to record them is to work on these patterns one at a time. Whenever you need to have the same pattern repeated, the Copy function (☞ p. 32) becomes invaluable.

Preparing for recording

① **From the Basic screen, select song number 4, and set the track into which you wish to record to [10] (Drum track).**

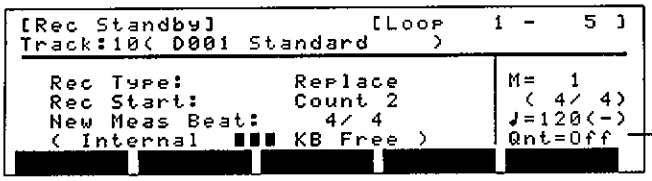
② **Press [LOOP] (the LOOP indicator lights).**

The looped section will be shown in the upper-right of the display. The looped section is a specified range of measures which will be repeated while you record into them.

Loop Section (Start measure – Return-back measure)

③ **Set the loop section. Here let's set a 4 measure section, [Loop 1 – 5].**

④ **Press [●] (REC) to enter recording standby.**

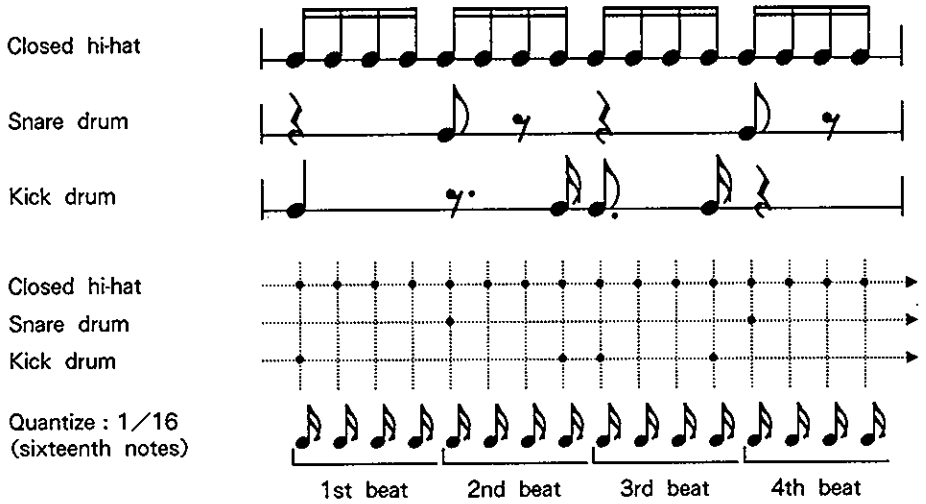


⑤ **Change the "Rec Type" from [Replace] to [Mix].**

When set to [Mix], new information being recorded can be mixed in with whatever performance data was previously recorded (Mix recording).

< Quantize >

To obtain perfect timing, set the unit to use quantization. Quantize can be changed during recording, if necessary. You do not need to stop the recording even when you wish to change the quantize setting with respect to certain percussive sounds.



Recording

① **Press [▶] (PLAY) and after a two measure count-in, the unit will begin recording (the indicator on [●] (REC) lights). Listen to the count-in to get the proper timing, then play the kick drum (the C2 key) first.**

Once the looped section returns to the first measure, you will start hearing the kick drum sounds you have just recorded.

② **While listening to the kick drum, play the snare drum (D2 key).**

When the loop starts again from the first measure, you will be able to hear the kick drum and snare drum notes that have been recorded so far.

③ **In the same manner, play any other percussive sounds you might want to include. They also will be added on top of what you already have.**

④ **When you are finished, press [■] (STOP).**

You are returned to the Basic screen.

If you want to record a different pattern, set a new looped section and begin recording.
If you want to continue with the same pattern in other parts of the song, use the Copy function (☞ p. 32) to copy the pattern.

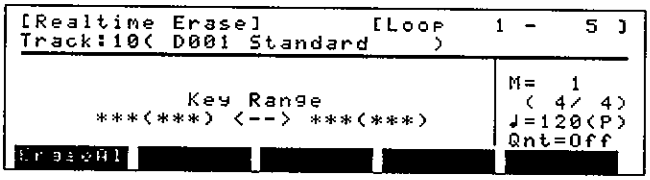
⑤ **Once recording has been completed, press [LOOP] to turn off the Loop record function.**

< Erasing specific percussive sounds (Real-Time Erase) >

Whenever you have made errors while playing a certain sound, you can erase that specific percussive sound during recording. The sound can then be re-recorded.

①Press [F1] Erase.

The Real-Time Erase screen will appear.



②To erase a specific sound, press the key that corresponds to that sound.

Whenever that key is pressed, the sound at that specific point will be erased. The display will show the Note Number (Note Name) of the key you are pressing.

To erase percussion notes located within a certain range, press two keys.

For example, if you wanted to erase the closed hi-hat (F#2), mid tom 1 (B2), and crash cymbal (C#3), you would press the F#2 and C#3 keys. While these two keys are pressed, the sounds located within the note range delimited by the two keys will be erased.

Should you wish to erase all percussion notes, press [F1] EraseAl.

While [F1] is pressed all of the notes will be erased.

③ Once you have completed whatever erasures you wish to make, press [EXIT] to return to the Real Time Recording screen. Re-record as necessary.

Step Recording

With this type of recording, you enter the notes in a song one by one.

Looking at performance data

As explained in "About the Sequencer" (☞ p. 7), every single event that occurs during play of the instrument is converted into MIDI data. Before starting out with Step Recording, let's first have a look at the content of the song at song number 1 using the Microscope screen.

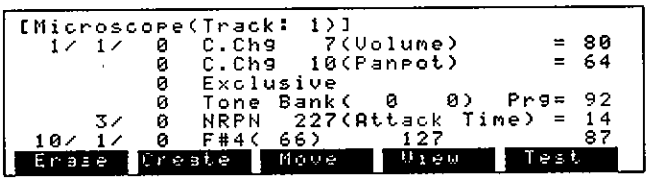
Steps to Take

① Select song number 1 from the Basic screen.

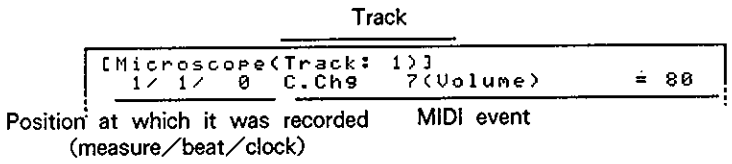
② Select track 1.

③ Press [MICRO/STEP].

The [MICRO/STEP] indicator will light, and the Microscope screen will appear.



The display will show the recorded MIDI events in the order they occurred.



④ Use the [▲][▼] cursor keys to display events at other positions.

⑤ To change the track, move the cursor to the track number (if the cursor is at the measure number, press the [◀] cursor key), and select the new number.

⑥ To return to the Basic screen, press [REALTIME].

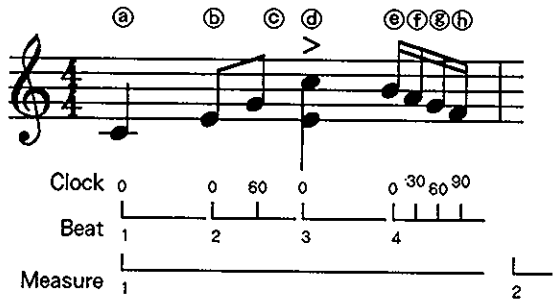
< About the Clock >

The 'clock' is a unit of reference on the JW-50. It is the smallest time unit which can be recognized when recording performance data. There are always 120 clock pulses per quarter note. When using a beat of 4/4, one beat will consist of 120 clock pulses, and there will be 480 clock pulses per measure.

< About MIDI Events >

Each of the individual pieces of data that is displayed is known as a MIDI Event. Although there are many kinds of MIDI Events, the Note event is the most common type that is generated when playing the instrument. A Note event is a MIDI event used to sound a single note, and it is represented in terms of the note number, velocity, and gate time.

< Example of correspondence between Note Events and staff notation >




```
[Microscope(Track: 1)]
  1/ 1/   0   Tone Bank( 80    0)   Prg=   1
ⓐ          0   C 4( 60)    v= 62     g=  102
ⓑ       2/ 0   E 4( 64)       59          55
ⓒ         60   G 4( 67)       63          40
ⓓ       3/ 0   E 4( 64)       87          93
ⓓ          0   C 5( 72)       94          90
ⓔ       4/ 0   B 4( 71)       72          28
ⓕ         30   A 4( 69)       54          29
ⓖ         60   G 4( 67)       47          24
ⓗ         90   F 4( 65)       55          26
```

Gate Time (time between playing and releasing key)

Velocity (strength with which key was played)

Position of key : Note Number (note name)

Position at which it was recorded (measure/beat/clock)

Preparing for recording

Decide on the Song Number, tracks, Tones, and beat that you wish to use for recording.

Steps to Take

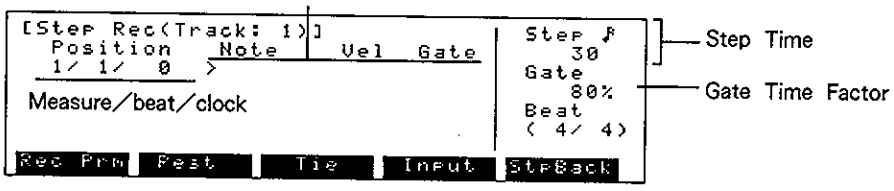
① From the Basic screen, select song number 5, and set the recording track to [1].

② Select the Tone you wish to use when recording.

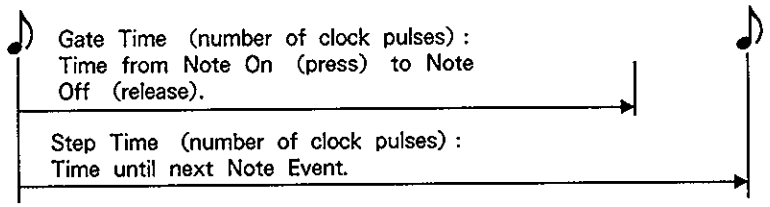
③ Press [MICRO / STEP] to select the Micro/Step screen.

④ Press [●] (REC) to select the Step Recording screen.

Note Name (Note Number), Velocity, Gate Time



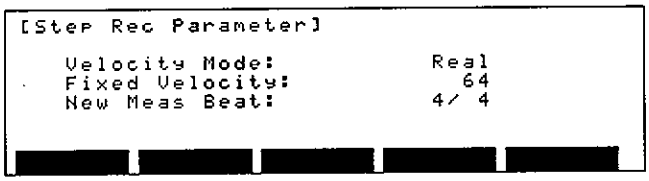
< Step Time and Gate Time >


Gate Time (number of clock pulses) :
Time from Note On (press) to Note Off (release).
Step Time (number of clock pulses) :
Time until next Note Event.

Using a fixed velocity
Recording phrases in a beat other than 4/4

①Press [F1] Rec Prm.

The Step Recording Parameter screen will appear.



②Make the setting changes.

- When you wish to have notes input at a fixed velocity (force at which key is pressed) regardless of the actual force used when playing keys, set the "Velocity Mode" to [Fix], and set the value that is to be used for "Fixed Velocity."
- To record phrases in a beat other than 4/4, make the appropriate setting for "New Meas Beat."

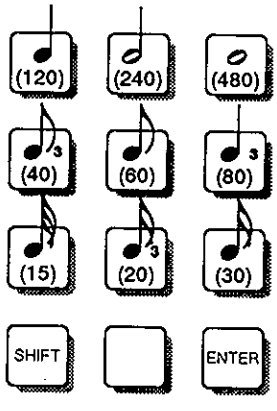
** The setting for "New Meas Beat" should be made if you are going to add new measures. Note, though, that if you intend on recording into measures where performance data has already been recorded, the beat for those measures cannot be changed using "New Meas Beat." However, whatever new measures that are recorded will have the beat set in "New Meas Beat."*

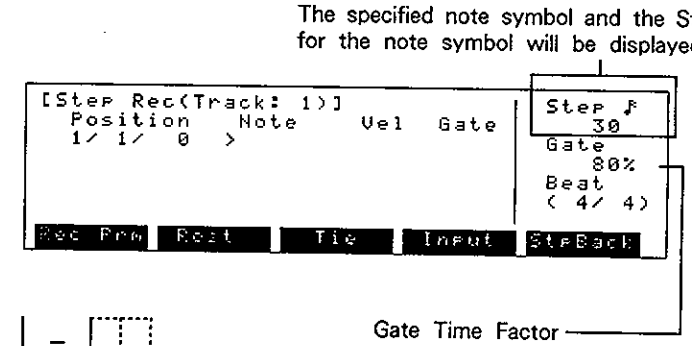
③Once the settings have been made, press [EXIT] to return to the Step Recording screen.

Carrying out the recording

Steps to Take

① Specify the note value (Step Time) using the numeric keys.





To enter a note value other than those printed above the numeric keys, press [F4] Input. When you press [F4], the note symbol that appeared to the right of "Step" will no longer be shown. Now, you can enter the Step Time in terms of a number of clock pulses. When specifying the clock pulses, refer to the following chart.
If you wish to enter one of the note values printed above a Numeric key, press [F4] Input again.

Note	Step Time/Numeric key		Note	Step Time/Numeric key	
𝅝	480	[9]	♩	60	[5]
𝅗𝅥.	360		♩₃	40	[4]
𝅗𝅥	240	[8]	𝅘𝅥𝅯.	45	
𝅗𝅥₃	160		𝅘𝅥𝅯	30	[3]
♩.	180		𝅘𝅥𝅯₃	20	[2]
♩	120	[7]	𝅘𝅥𝅰	15	[1]
♩₃	80	[6]	𝅘𝅥𝅰₃	10	
𝅗𝅥..	90				

② Here you set the amount of time between the moment a key is pressed and the moment it is released (Gate Time).

The Gate Time will be input automatically in accord with the setting for "Gate" (Gate Time Factor) that appears below the Step Time. For example, if the Step Time is set to eighth notes (60), and the Gate Time Factor is at 80%, a Gate Time of 48 (80% of an eighth note) will be entered. Decrease the factor to obtain a somewhat more staccato feel, or increase the factor to produce legato effects.

③ Press and release the key(s) for the note(s) to be entered.

The specified note(s) (Note Event(s)) will be entered, and the unit will await input of the next note(s).

★ When a mistake has been made during input

Press [◀◀] (BWD) or [F5] StpBack. The cursor will return to the previous note (Note Event), allowing you to enter the correct note.

● Input of chords

Press and release the notes of the chord.

● Input of rests

When a rest is entered, the insertion point is advanced by an amount equal to the number of clock pulses in the rest. There are three ways in which rests can be entered.

1) After setting the Step Time to the duration of the rest, press [F2] Rest.
2) When a note symbol appears in the display, you can hold down [SHIFT] and press the numeric key offering the note which is the same duration as the rest you wish to insert. For example, hold down [SHIFT] and press numeric key [5] (where the symbol for an eighth note is shown) and an eighth note rest will be entered.
3) To enter rests through to the end of the measure, press [▶▶] (FWD), or press [F1] NxtMeas while you hold down [SHIFT].

④ Enter the next note.

If the note value you need is of the same value as the note before it, you can press and release the key for the note to be entered. If the note value is different, use the numeric keys to first specify the new note value, then press and release the key for the note to be entered.

● Input of ties

Press [F3] Tie. When you press [F3], the duration of the Step Time for the note immediately before will be extended by an amount equivalent to the displayed Step Time. The Gate Time will also be extended by a corresponding amount.

⑤ Repeat the above procedures to enter all the notes.

⑥ Once recording has been completed, press [■] (STOP) to return to the Microscope screen.

⑦ After pressing [|◀] (RESET), press [▶] (PLAY) to listen to what you have just recorded on that particular track.

■ Convenient Editing Functions

Here we will explain some of the convenient editing functions.

Copying a section

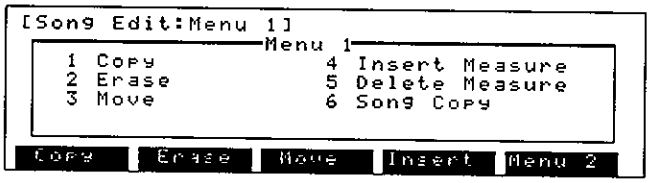
The Copy function is used when you wish to copy a phrase for use elsewhere, or to repeat the same phrase a number of times. Here let's try copying the 4 measure drum pattern that we made earlier for song number 4.

Steps to Take

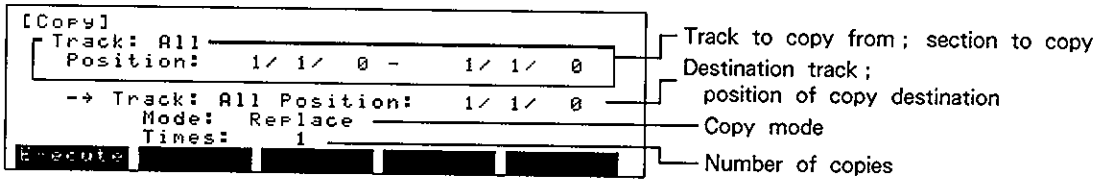
① From the Basic screen, select song number 4.

② Select the Copy screen.

1) Press [SONG EDIT] to select the Song Edit: Menu 1 screen.



2) Press [F1] Copy, and the Copy screen will appear.



③ Select the track to copy from, and the section to copy.

Select track 10 (Drum track) as the track to copy from.

Specify the beginning and end of the section to copy in terms of measure/beat/clock. Here we wish to copy measures 1 through 4, so set it to [1/1/0 – 5/1/0].

④ Specify the destination track and the position of the copy destination.

Set the destination track to the same track; track 10 (Drum track).

The position of the copy destination is also specified in terms of measure/beat/clock. Those who have created only one 4-measure pattern should set the "position to copy to" setting to the 5th measure; [5/1/0].

⑤ Select the copy mode.

To erase the performance data at the copy destination, select [Replace]. To add the new data on top of the performance data at the copy destination, select [Mix]. For our purposes here we will leave it set to [Replace].

⑥ Specify the number of copies to be made.

If a number of copies of the pattern are to be made, specify the number. For example, if you wanted to have the pattern repeat until the 16th measure, you would need 3 copies, so you would set it to [3].

⑦ **Carry out the procedure.**

Press [F1] Execute. Here the unit waits, expecting you to specify the MIDI events that are to be copied. Since we want to copy all the MIDI events, you simply need to press [F1] Execute once again. The "Are you sure?" message will appear in the display, asking you to confirm your choice. Press [F4] YES to perform the copy (to cancel, press [F5] NO). Once the operation is finished, "Completed" will appear in the upper-right corner of the display.

⑧ **Here you should check to see if the copy produced the intended result. Playback the song while still in this screen.**

After pressing [|◀] (RESET), press [▶] (PLAY) to start playback.

⇨ *If you are not satisfied with the result of the copy, press [F5] Undo. When you press [F5], you are returned to the state you were in a moment ago. You can then perform the copy operation again.*

⑨ **When the operation is finished, press [SEQUENCER] to return to the Basic screen.**

Erasing a section

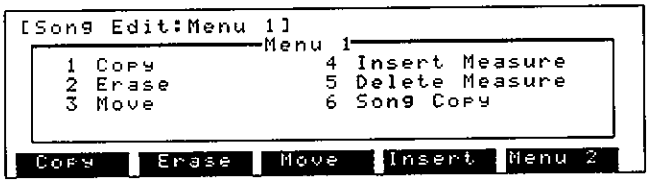
Use the Erase function when you wish to erase specific sections of recorded data. Here let's erase the performance data in measures 5 through 10, of tracks 1 to 16, of Song Number 1.

Steps to Take

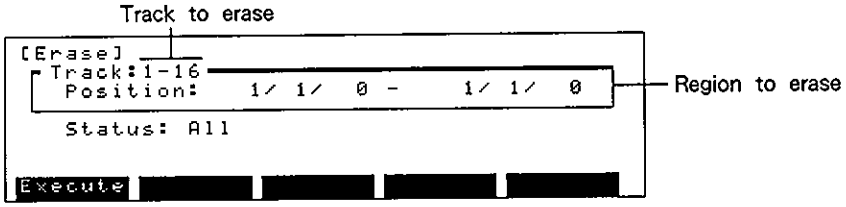
① **Select Song Number 1 from the Basic screen.**

② **Select the Erase screen.**

1) Press [SONG EDIT] to select the Song Edit: Menu 1 screen.



2) Press [F2] Erase to select the Erase screen.



③ **Specify the track containing the performance data to be erased, and the section to erase.**

Since we want to erase all the performance data on tracks 1 to 16, set it to [1 – 16].

Specify the beginning and end of the section to erase in terms of measure/beat/clock. For our example here, we will set it to [5/1/0 – 11/1/0].

④ **Carry out the procedure.**

Press [F1] Execute. The "Are you sure?" message will appear in the display asking you to confirm your choice. Press [F4] YES to carry out the erasure (to cancel, press [F5] NO). When the operation is finished, "Completed" will appear in the upper-right corner of the display.

⑤ **While in this screen, playback the song to check the result.**

After pressing [|◀] (RESET), press [▶] (PLAY) to start playback.

⇨ *If the result was not as expected, press [F5] Undo. When you press [F5], you are returned to the state you were in a moment ago. You can then perform the operation again.*

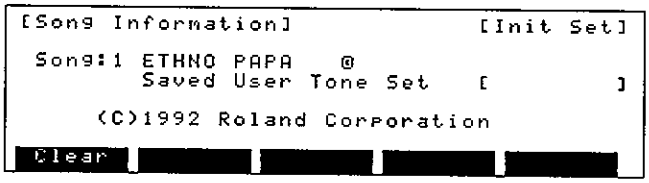
⑥ **When the operation is finished, press [SEQUENCER] to return to the Basic screen.**

Erasing songs

Whenever you want to erase songs you no longer need, or want to re-record a song completely from the beginning, use the Song Clear function. When you perform a Song Clear, the performance data on every track will be erased. Let's erase the song at Song Number 2.

Steps to Take

① **From the Basic screen, press [F2] SngInfo to select the Song Information screen.**



② **Select Song Number 2.**

③ **Carry out the procedure.**

Press [F1] Clear. The "Are you sure?" message will appear in the display, asking you to confirm your choice. Press [F4] YES to carry out the procedure (to cancel, press [F5] NO). When the operation is finished, "Completed" will appear in the upper-right corner of the display.

④ **Press [SEQUENCER] to return to the Basic screen.**

⑤ **Here you should check to see if the song indeed was erased.**

If no song plays when you press [▶] (PLAY), you will know that the song has been erased.

■ Recording Using the Backing Feature

Now let's try using the Backing feature to create a song.

Procedure used to create a song

The Backing feature allows you to create accompaniment which uses 4 instrument parts (Drums, Bass, Instrument 1/Instrument 2). Blocks are created using the procedure outlined below.

① Create the Blocks you need for a song's accompaniment.

A Block is a pattern unit containing 4 measures of accompaniment. A total of ten blocks (A to J) can created. Blocks are created by simply selecting the Music Style you like and creating a chord progression.

⇨ *Music Styles are a collection of basic musical elements that together form a particular genre, such as rock or jazz etc. A wide range of Music Styles are contained within the JW-50.*

⇨ *Chord progressions, each consisting of 4 measures, are provided by the JW-50. These Chord progressions are known as "Preset Chord Changes." The Preset Chord Changes can be used as is, or you can make whatever changes you wish to the chords.*

② Record the Blocks as they play into the sequencer.

Two recording methods are available:

1) While using the function keys to specify the Blocks, carry out Real-Time recording.
2) Set the order in which the Blocks are to be played in the Make Song screen. Then carry out Real-Time recording while the Blocks play in the set order.

⇨ *At the same time as you record into the sequencer, you can also play phrases from the keyboard and have them included.*

③ The data that you record into the sequencer in this manner is the same as any other data that you record. So, if necessary, you can later add on other parts and perform any of the editing procedures.

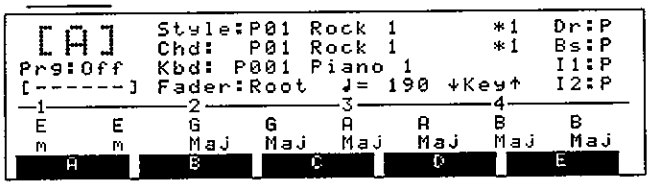
Playing Blocks

Before creating any Blocks of your own, try playing some of the Blocks for which settings have already been made.

Steps to Take

① Press [BLOCK] to select the Block screen.

Block Name

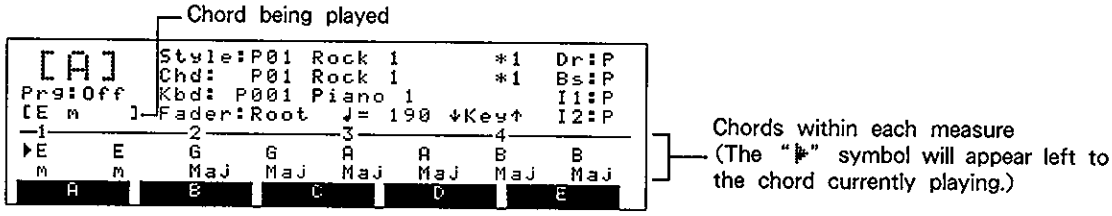

[A] Style:P01 Rock 1 *1 Dr:P
Chd: P01 Rock 1 *1 Bs:P
Prg:Off Kbd: P001 Piano 1 I1:P
[------] Fader:Root ♩= 190 ↓Key↑ I2:P
1 2 3 4
E E G G A A B B
m m Maj Maj Maj Maj Maj Maj
A B C D E

② Check that the [LOOP] indicator is lit.

If the [LOOP] indicator is not lit, press [LOOP]. You are now ready to have the indicated Block play as many times as you wish.

③Press ▶ (PLAY) to listen to the Blocks being played.

Block A, the displayed Block, will be played repeatedly. The display allows you to view the status of the playback while it is in progress.


Chord being played
[A]
Prg:Off
Style:P01 Rock 1 *1 Dr:P
Chd: P01 Rock 1 *1 Bs:P
Kbd: P001 Piano 1 I1:P
Fader:Root ♩= 190 ↓Key↑ I2:P
1 2 3 4
E E G G A A B B
m m Maj Maj Maj Maj Maj Maj
A B C D E
Chords within each measure
(The "▶" symbol will appear left to the chord currently playing.)

● To change the tempo, move the cursor to "♩ =" and make the desired change.

● You can play along on the keyboard with playback of the Blocks. The Tone which will sound from the keyboard will be the one indicated next to "Kbd." To select a different Tone, move the cursor to "Kbd" and select a Tone.

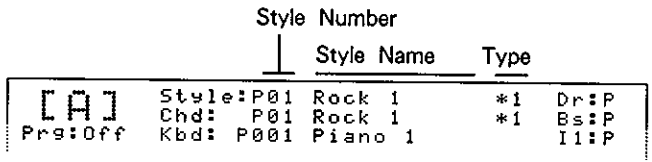
④To stop playback, press ■ (STOP).

Creating Blocks

Select the desired Music Style and make your choices for the chord progressions. Once one Block has been created, you will find it useful to listen to it while you create others.

Select the Music Style

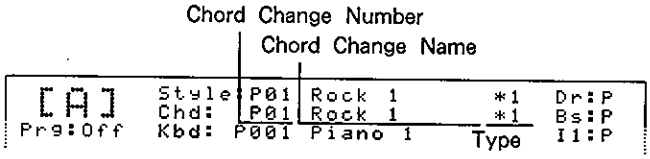
There are 30 Music Styles (P1 to P30), and each has three variations; Original (*1), Variation 1 (*2), and Variation 2 (*3). Select the Music Style by means of the Style Number, then move the cursor to "*1" and select the type.



** If you select a different Music Style during play, the new Music Style will start playing after the current accompaniment is finished.*

Select the Chord Changes

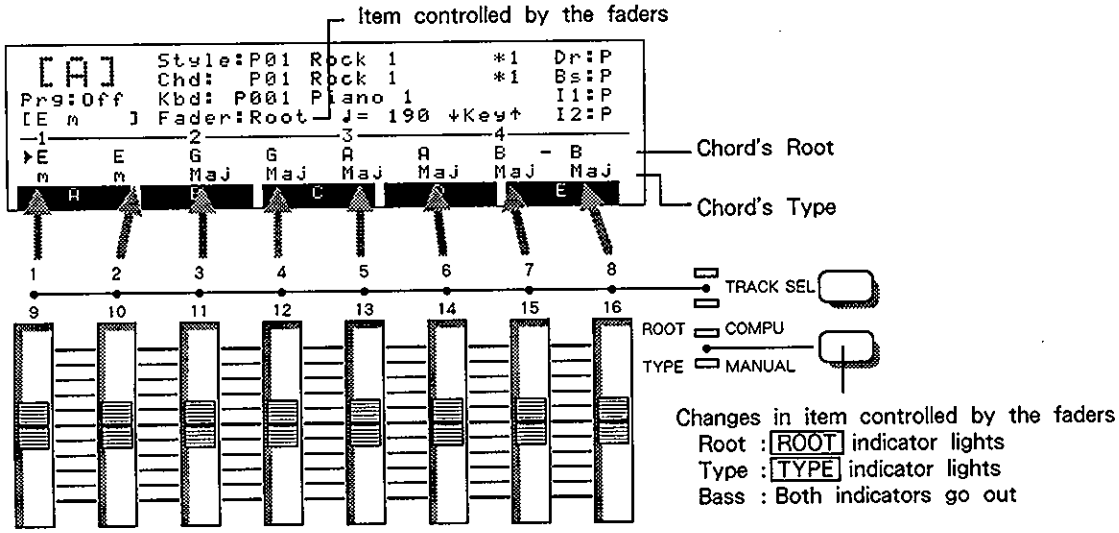
There are two types of Chord Changes; Preset Chord Changes (P1 to P30), and User Chord Changes (U1 to U50). For each Preset Chord Change number there are three variations: Original (*1) , Variation 1 (*2), and Variation 2 (*3) . Chord Changes are selected in terms of their Chord Change Number. When you have selected a Preset Chord Change, you can move the cursor to "*1" and select the type.



⇨ *The Preset Chord Changes contain chord progressions that are geared toward the style of music provided by the Music Style of the same number.*

Altering Chords

Use the faders to alter the chords. Chords are composed of Root/Type/Bass. Use [ROOT / TYPE] to select which of these is to be altered using the faders. Each press of [ROOT / TYPE] switches between Root and Type. To change to Bass, press [ROOT / TYPE] while holding down [SHIFT].


Item controlled by the faders
[A] Style:P01 Rock 1 *1 Dr:P
Chd: P01 Rock 1 *1 Bs:P
Prg:Off Kbd: P001 Piano 1 I1:P
[E m] Fader:Root ♩= 190 ♦Key♦ I2:P
1 2 3 4
▶E E G G A A B - B
m m Maj Maj Maj Maj Maj Maj
Chord's Root
Chord's Type
1 2 3 4 5 6 7 8
9 10 11 12 13 14 15 16
TRACK SEL
ROOT COMPU
TYPE MANUAL
Changes in item controlled by the faders
Root : [ROOT] indicator lights
Type : [TYPE] indicator lights
Bass : Both indicators go out

⇨ *The action obtained with the faders can be changed by moving the cursor to "Fader" and making the change.*

Changing Blocks

You can switch among Blocks A to J using the function keys.

[F1] A, [F2] B, [F3] C, [F4] D, [F5] E
[SHIFT] + [F1] F, [SHIFT] + [F2] G, [SHIFT] + [F3] H, [SHIFT] + [F4] I, [SHIFT] + [F5] J

You can select another Block during play if you wish. However, if you do so, the new Block will start playing after the current one is finished.

While playing, switch among the Blocks to check that they are arranged in the proper sequence.

Carrying out the recording while changing Blocks

Here we will try recording into the sequencer while using the function keys to switch among the Blocks. We will use number 6 as the destination Song Number (because nothing has been recorded there).

Preparing for recording

① Press [SEQUENCER] to return to the Basic screen. Select Song Number 6.

② Press [BLOCK] to return to the Block screen.

③ Try rehearsing it once.

Check that the [LOOP] indicator is lit.

Press [▶] (PLAY) to start playback of the Blocks. Change among Blocks in the order in which they are to be recorded. When you are through rehearsing, press [■] (STOP).

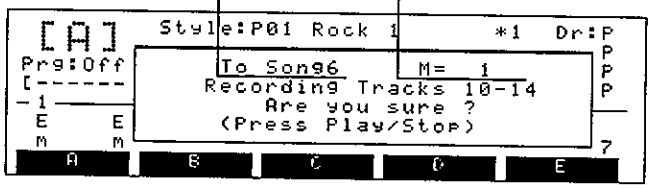
④ Select the Block you wish to record first.

Carry out the recording

① Press [●] (REC) to enter recording standby.

Song Number at destination for the recording

Measure from which recording is to start



② Press [▶] (PLAY) to start recording.

After the metronome has played a two measure count-in, the unit begins recording (the indicator on [●] (REC) go out). After the two measure count-in, the indicated Block will be recorded. Carry out the recording while using the function keys to switch among the Blocks. If you also wish to record a melody, play it on the keyboard.

③ To finish the recording, press [LOOP] while the last Block is playing (the indicator on [LOOP] will go out).

The song will then stop after the Block is finished playing.

** If you finish the recording by pressing [■] (STOP), recording will stop at the moment you press [■] (STOP).*

④ Press [SEQUENCER] to return to the Basic screen. Press [▶] (PLAY) to start playback. Here let's check to see if the recording turned out as intended.

< Tracks Targeted for Recording >

Blocks will be recorded into the following tracks.

Drum Part	: Track 10 (D)
Bass Part	: Track 11
Instrument 1 Part	: Track 12
Instrument 2 Part	: Track 13
What is played on the keyboard	: Track 14
Beat for the performance	: Beat Track

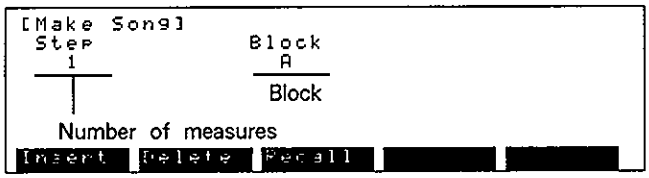
Carrying out recording after setting a playing order

Next, we will first set up a playing order for the Blocks from the Make Song screen, then carry out Real-Time recording.

Setting the playing order

① Select Song Number 7.

② Press [MAKE SONG] to select the Make Song screen.



③ Specify the Blocks in the order you wish them to play.

Using the dial, select the first Block, then press [ENTER]. When you press [ENTER], the cursor will move to the next Step. Specify the subsequent Blocks in the same way.

● To change a Block at a Step that is partway through the song

Move the cursor to the step having the Block you wish to change and re-select the Block.

● To add a Block at a Step that is partway through the song

Move the cursor to the step having the Block after which you wish to add another, and press [F1] Insert. When you press [F1], the Block that is inserted will be identical to the one at the Step where the cursor is located. If you wish to have another Block there, change it after the insertion.

● To erase a Block at a Step that is partway through the song

Move the cursor to the step having the Block you wish to delete and press [F2] Delete.

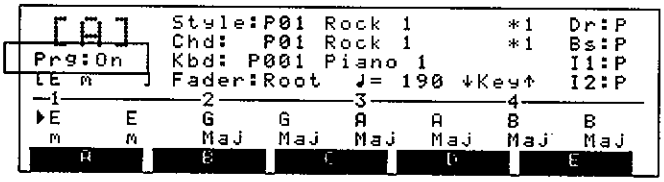
④ After pressing [|◀] (RESET), press [▶] (PLAY) to start playback of the Blocks. Be sure they are played in the order intended.

Carrying out the recording

①Press [BLOCK] to select the Block screen.

②Set "Prg" to [On].

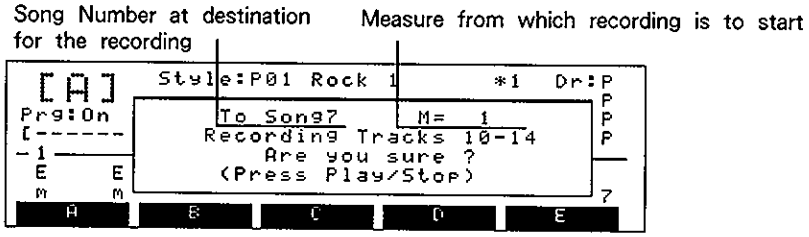
When "Prg" is set to [On], the Blocks will be played in the order you set in the Make Song screen.


[A]
Prg:On
Style:P01 Rock 1 *1 Dr:P
Chd: P01 Rock 1 *1 Bs:P
Kbd: P001 Piano 1 I1:P
Fader:Root ♩= 190 ↓Key↑ I2:P
1 2 3 4
E E G G A A B B
Maj Maj Maj Maj Maj Maj
A B C D E

③Be sure that the [LOOP] indicator is dark.

If the [LOOP] indicator is lit, press [LOOP].

④Press [●] (REC) to enter recording standby.



⑤Press [▶] (PLAY) to start recording.

After the two measure count-in, the unit begins recording (the indicator on [●] (REC) lights). After the count-in, the Blocks will be recorded in the set order. If you also wish to record a melody, play it on the keyboard.

When the last Block is finished, the recording will stop.

⑥Press [SEQUENCER] to return to the Basic screen. Press [▶] (PLAY) to start playback and listen to the result.

< Tracks Targeted for Recording >

Blocks will be recorded into the following tracks.

Drum Part	: Track 10 (D)
Bass Part	: Track 11
Instrument 1 Part	: Track 12
Instrument 2 Part	: Track 13
What is played on the keyboard	: Track 14
Beat for the performance	: Beat Track

Recording Using the Mixer

Once the song has been completed, you can add volume/pan changes as finishing touches. Let's work with the song recorded earlier using the Backing feature (Song Number 7).

The following methods are available when recording using the Mixer:

1) The settings in the display can be recorded at the desired position. If you record the settings for volume and pan at the beginning of the song, you will always be assured of having them in effect each time the song is played back.

2) The faders can be moved while a song is played back, while at the same time you record the desired changes in volume for each of the tracks. This method conveniently allows you to place a fade-in at the beginning of a song or a fade-out at the end. The same type of recording can also be accomplished for pan.

Recording the settings for Pan at the beginning of a song

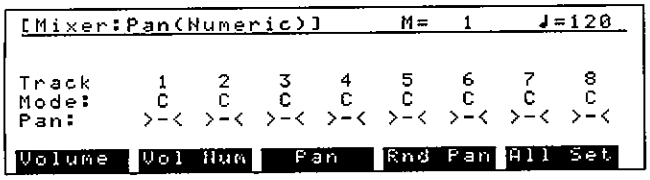
First, let's try recording the settings for Pan at the beginning of the song.

Steps to Take

① Select the Mixer's Pan screen (numeric display)

1) Press [MIXER] to select the Mixer's Volume screen.

2) Press [F4] Pan Num to select the Pan screen (numerical display).



② Be sure that "Mode" (Mix mode) for every track that is displayed is set to [M] (Manual). If there are any that aren't set this way, press [COMPU/MANUAL] to get the MANUAL indicator to light for them.

③ Make the Pan settings for the tracks which contain performance data (10 (D) to 14).

1) Press [TRACK SEL] and select tracks 9 to 16.

2) After first lowering all the faders for tracks 10 to 14, raise them to their maximum level.

3) Play the song back from the beginning and adjust the Pan for tracks 10 to 14.

4) Stop playback once the settings have been completed.

④ Press [I◀] (RESET) to return to the beginning of the song.

⑤ Press [F5] All Set and the displayed Pan settings will be recorded at the beginning of the song.

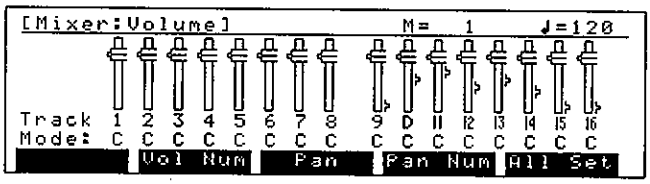
Recording changes in the volume using the faders

Next, we will play back the song while recording changes in volume.

NOTE: When recording volume (or pan) while playing back a song, it is quite easy to end up recording an enormous amount of unnecessary data. Try not to move the faders unnecessarily.

Steps to Take

① Press [F1] Volume to select the Volume screen.



② Be sure that "Mode" (Mix mode) for every track that is displayed is set to [M] (Manual). If there are any that aren't set this way, press [COMPU/MANUAL] to get the MANUAL indicator to light for them.

③ Press [|◀] (RESET) to return to the beginning of the song.

④ Be sure that the faders provide control over the volume for tracks 9 to 16. If they don't, press [TRACK SEL] to make the change.

⑤ After first lowering all the faders for tracks 10 to 14, raise them to their maximum level.

⑥ Try rehearsing it once.

Press [▶] (PLAY) to play back the song, and move the faders for tracks 10 to 14.
When the rehearsal is finished, press [■] (STOP), then press [|◀] (RESET) to return to the beginning of the song.
The faders for tracks 10 to 14 should then be set to the positions required when recording begins.

⑦ Press [●] (REC) to enter recording standby.

⑧ Set the "Mode" (Mix mode) for tracks 10 to 14 to [R] (Rec).

⑨ Press [▶] (PLAY) to begin recording .

The unit will immediately enter the recording mode (the indicator on [●] (REC) lights). Made the desired changes in the volume by moving the faders. When you are finished, press [■] (STOP).
Once the volume change data has been recorded, the Mix mode will change to [C] (Compu).

⑩ After pressing [|◀] (RESET), play back the song to monitor the result.

When the song is played back, the faders in the display will move in accord with what was recorded.

Saving Song Data

Thus far we have recorded a lot of things, but all of it will be lost as soon as you turn off the power to the JW-50. If you wish to retain any of this data, you must save it onto a disk. Make sure you have a new disk on hand. The supplied disk is a master disk (protected). Consequently, you won't save any data on it.

Important: Be sure you use only 3.5 inch micro-floppy disks (2DD). No other types of disks can be used. Also, make sure to only use disks of an assured quality. If the disk is inferior, you may not be able to reliably store data on it.

Formatting Disks

All disks (new and previously used) must be formatted for use with the JW-50.

** All data contained on a disk will be erased as a result of formatting.*

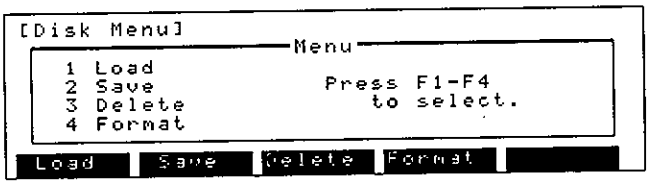
Steps to Take

① Insert the disk (protect tab OFF).

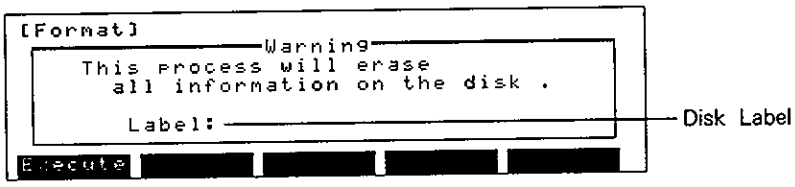
Be sure the disk is inserted properly.

② Select the Format screen.

1) Press [DISK] to select the Disk Menu screen.



2) Press [F4] Format to select the Format screen.



< Supplying a Disk Label (11 characters maximum) >

Once a disk label (name) has been created, it will be displayed in the Load and Save screens. This conveniently allows you to confirm which disk you currently have in the drive. Refer to the next page for directions on how to create names. Note that disks can be formatted without being given a disk label.

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③ Press [F1] Execute.

The "Are you sure?" message will appear in the display asking you to confirm your choice.

④ Press [F4] YES and formatting begins. (To cancel, press [F5] NO).

When the formatting is finished, "Completed" will appear in the upper-right corner of the display.

To continue and save your song data onto the disk, press [EXIT]. You will be returned to the Disk Menu screen where you can then proceed from 2) in step ② below.
To return to the Basic screen, press [SEQUENCER].

Saving Your Song Data

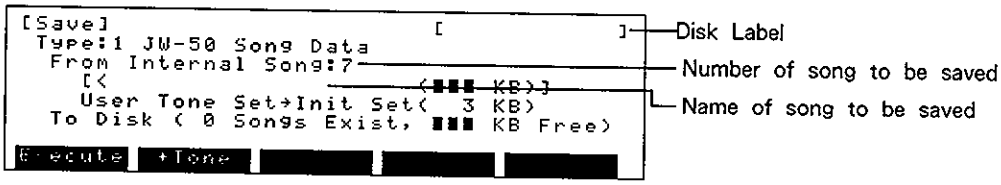
Steps to Take

① Insert the disk (protect tab OFF).

Be sure the disk is inserted properly.

② Select the Save screen.

1) Press [DISK] to select the Disk Menu.
2) Press [F2] Save to select the Save screen.
3) Be sure that the "Type" (type of data) has been set to [1 JW-50 Song Data].



③ Select the number of the song you wish to save and give it a name.

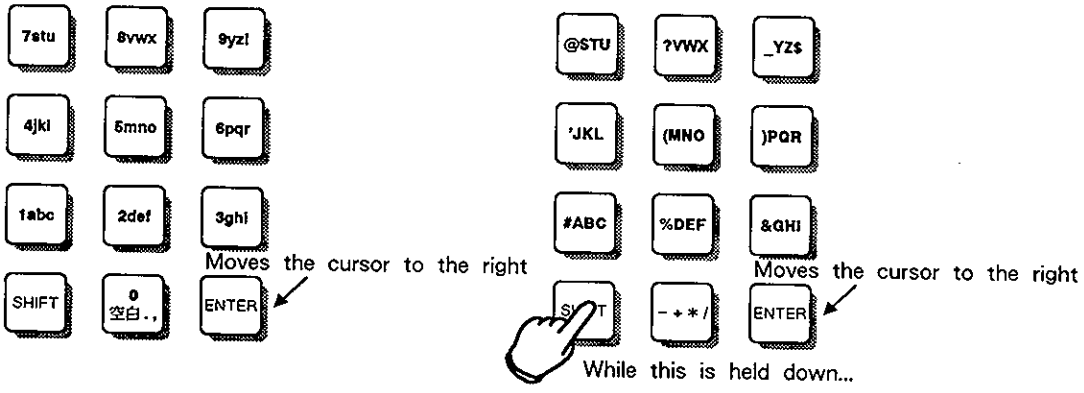
Since the songs we have recorded so far (Song Numbers 3 to 7) have not been given names, no name will be displayed for them. Move the cursor to [<] and create names for them.

** Songs must be given a name otherwise they cannot be saved.*

< Entering Names Using the Numeric Keys >

The characters that appear to a key's upper left corner can be entered directly. With each press of the key, you step through the characters a particular key offers. Additionally, with [SHIFT] held down, the available choices will be different.

When entering names, a character is accepted without pressing [ENTER]. When you press [ENTER], the cursor will move to the right and await entry of the next character.



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④ **Press [F1] Execute.**

The "Are you sure?" message will appear in the display asking you to confirm your choice.

⑤ **Press [F4] YES and the data will be saved. (To cancel, press [F5] NO.)**

Once the data has been saved, "Completed" will appear in the upper-right corner of the display.

⑥ **If there are additional songs that you wish to save, repeat steps ③ through ⑤.**

⑦ **Push the eject button and remove the disk from the drive. Press [SEQUENCER] to return to the Basic screen.**

Finishing Up

When through using the JW-50, turn OFF the power.

Steps to Take

① Be sure there is no disk in the drive. If there is, press the eject button and remove it.

② Turn down the volume on any amplifier or mixer you have connected, and then turn it off.

③ Turn off the JW-50.

For Nordic Countries

Apparatus containing Lithium batteries

ADVARSEL!

Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

VARNING!

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

ADVARSEL!

Lithiumbatteri – Eksplosjonsfare.
Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverandøren.

VAROITUS!

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

For the U.K.

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

BLUE : NEUTRAL
BROWN : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

For Germany

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das

Roland Music Workstation JW-50

(Gerät. Typ. Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

Amtsbl. Vfg 1046/1984

(Amtsblattverfügung)

funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka/Japan

Name des Herstellers/Importeurs

For the USA

RADIO AND TELEVISION INTERFERENCE

WARNING — This equipment has been verified to comply with the limits for a Class B computing device, pursuant to Subpart J, of Part 15, of FCC rules. Operation with non-certified or non-verified equipment is likely to result in interference to radio and TV reception.

The equipment described in this manual generates and uses radio frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference with radio and television reception. This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J, of Part 15, of FCC Rules. These rules are designed to provide reasonable protection against such a interference in a rasidential installation. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measure:

- Disconnect other devices and their input/output cables one at a time. If the interference stops, it is caused by either the other device or its I/O cable. These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non Roland devices, contact the manufacturer or dealer for assistance.

If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures.

- Turn the TV or radio antenna until the interference stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment farther away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with coaxial cable lead-in between the antenna and TV. If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission:

"How to Identify and Resolve Radio — TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

For Canada

CLASS B **NOTICE**

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

CLASSE B **AVIS**

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Réglement des signaux parasites par le ministère canadien des Communications.

Roland Corporation

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